Effects of Nutrient and Acid Additions on Secchi Depth at the Experimental Lakes Area, 1969-1986

D.R. Cruikshank

Central and Arctic Region
Department of Fisheries and Oceans
Winnipeg, Manitoba, R3T 2N6

March 1988

Canadian Technical Report of Fisheries and Aquatic Sciences No. 1597

Fisheries and Oceans Pêches et Océans

Canada

88-03403/

Canadian Technical Report of Fisheries and Aquatic Sciences

Technical reports contain scientific and technical information that contributes to existing knowledge but which is not normally appropriate for primary literature. Technical reports are directed primarily toward a worldwide audience and have an international distribution. No restriction is placed on subject matter and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries and aquatic sciences.

Technical reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report is abstracted in *Aquatic Sciences and Fisheries Abstracts* and indexed in the Department's annual index to scientific and technical publications.

Numbers 1–456 in this series were issued as Technical Reports of the Fisheries Research Board of Canada. Numbers 457–714 were issued as Department of the Environment, Fisheries and Marine Service, Research and Development Directorate Technical Reports. Numbers 715–924 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Technical Reports. The current series name was changed with report number 925.

Technical reports are produced regionally but are numbered nationally. Requests for individual reports will be filled by the issuing establishment listed on the front cover and title page. Out-of-stock reports will be supplied for a fee by commercial agents.

Rapport technique canadien des sciences halieutiques et aquatiques

Les rapports techniques contiennent des renseignements scientifiques et techniques qui constituent une contribution aux connaissances actuelles, mais qui ne sont pas normalement appropriés pour la publication dans un journal scientifique. Les rapports techniques sont destinés essentiellement à un public international et ils sont distribués à cet échelon. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du ministère des Pêches et des Océans, c'est-à-dire les sciences halieutiques et aquatiques.

Les rapports techniques peuvent être cités comme des publications complètes. Le titre exact paraît au-dessus du résumé de chaque rapport. Les rapports techniques sont résumés dans la revue *Résumés des sciences aquatiques et halieutiques*, et ils sont classés dans l'index annual des publications scientifiques et techniques du Ministère.

Les numéros 1 à 456 de cette série ont été publiés à titre de rapports techniques de l'Office des recherches sur les pêcheries du Canada. Les numéros 457 à 714 sont parus à titre de rapports techniques de la Direction générale de la recherche et du développement, Service des pêches et de la mer, ministère de l'Environnement. Les numéros 715 à 924 ont été publiés à titre de rapports techniques du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom actuel de la série a été établi lors de la parution du numéro 925.

Les rapports techniques sont produits à l'échelon régional, mais numérotés à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page du titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Canadian Technical Report of
Fisheries and Aquatic Sciences 1597

March 1988

EFFECTS OF NUTRIENT AND ACID ADDITIONS ON SECCHI DEPTH AT THE EXPERIMENTAL LAKES AREA, 1969-1986

by

D.R. Cruikshank

Central and Arctic Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

This is the 14th Technical Report
from the Central and Arctic Region, Winnipeg

© Minister of Supply and Services Canada 1988

Cat. no. Fs 97-6/1597E ISSN 0706-6457

Correct citation for this publication is:

Cruikshank, D.R. 1988. Effects of nutrient and acid additions on Secchi depth at the Experimental Lakes Area, 1969-1986. Can. Tech. Rep. Fish. Aquat. Sci. 1597: iv + 82 p.

TABLE OF CONTENTS

	Page
ABSTRACT/RÉSUMÉ	iv
INTRODUCTION	1
METHODS	1
RESULTS	1
Reference lakes	1
Fertilized lakes	2
Acidified lakes	2
DISCUSSION	3
ACKNOWLEDGMENTS	4
REFERENCES	5

LIST OF TABLES

Table		Page
1	Physical characteristics of selected ELA lakes	6
2	Open-water annual mean Secchi depths 1969-1986	7
3	Lake 240 Secchi depths	8
4	Open water physical and chemical characteristics of Lake 223, L302N and L302S	9

LIST OF FIGURES

Figure		Page
1	Secchi depth vs cloud cover	10
2	Mean monthly and annual Secchi depths, L382, L239, L240	11
3	" " " " " " , L227, L226N, L226S	12
4	" " " " " " , L303, L304, L261	13
5	" " " " " " , L114, L224, L223	14
6	" " " " " " , L302N, L302S	15

LIST OF APPENDICES

Appendix		Page
A	Mean monthly Secchi depths	16
B	Secchi depth, water colour, wind speed and cloud cover data	22
C	Summary of t-test and time-trend ANOVA results	82

ABSTRACT

Cruikshank, D.R. 1988. Effects of nutrient and acid additions on Secchi depth at the Experimental Lakes Area, 1969-1986. Can. Tech. Rep. Fish. Aquat. Sci. 1597: iv + 82 p.

Secchi depths and water colour for 27 Experimental Lakes Area lakes are presented. Additions of the nutrients phosphorus and nitrogen together caused significant decreases in Secchi depth compared to reference lakes. There were no significant changes in annual mean Secchi depths in acidified lakes. There was increased Secchi depth variability in acidified lakes.

Key words: Secchi; transparency; water clarity.

RÉSUMÉ

Cruikshank, D.R. 1987. Effects of nutrient and acid additions on Secchi depth at the Experimental Lakes Area, 1969-1986. Can. Tech. Rep. Fish. Aquat. Sci. 1597: iv + 82 p.

On donne la profondeur de disparition du disque de Secchi et la couleur de l'eau pour 27 lacs dans le Région des Lacs Expérimentaux. L'ajout de substances nutritives, de phosphore et d'azote s'est traduit par une réduction considérable de la profondeur de disparition du disque de Secchi par rapport aux valeurs enregistrées dans les lacs de référence. Si les profondeurs moyennes annuelles de disparition du disque de Secchi n'ont pas varié de façon sensible dans les lacs acidifiés, la variabilité de la profondeur de disparition du disque de Secchi a, par contre, augmenté.

Mots-clés: Secchi; transparence; clarté de l'eau.

INTRODUCTION

The Secchi disk has become a standard piece of equipment used by limnologists to measure water clarity. Secchi disk transparency is, essentially, a function of the reflection of light from its surface and is, therefore, influenced by both the absorption characteristics of the water and its dissolved and particulate matter (Wetzel 1975). Secchi depth was also influenced by the time of day, cloud cover, wind action, observer's eyesight, seasonal variations and the reflective properties of the disk itself (Hutchinson 1957; Tyler 1968).

Several workers have studied the Secchi disk and its relationship to chlorophyll concentrations and light. Carlson (1977), developed a trophic state index for lakes that was based upon the transparency of water as measured by a Secchi disk. The Secchi depth was expressed as a power function of chlorophyll concentrations. Lorenzen (1980) and Megard et al. (1980), however, criticize the index because the equation excludes the effects of substances other than algae which attenuate subsurface light.

Hasler (1947), Edmondson et al. (1970) and Beeton (1965) showed that lake eutrophication resulted in a decrease in Secchi transparency. Hergenrader (1980) showed that Secchi depths decreased while the age of reservoirs increased.

Secchi transparency has been negatively correlated with pH (Yan 1983). Yan found in a study of Lohi Lake that as pH decreases, Secchi depth increases. Almer et al. (1984) also found increases in transparency as pH decreases in Swedish lakes.

Secchi disk transparency measurements have been taken at the Experimental Lakes Area (ELA) since 1968. The effects of nutrient and acid additions to lakes on Secchi transparency will be discussed.

This report summarizes the Secchi disk readings of 27 ELA basins. Graphs of mean annual and mean monthly Secchi disk readings for 14 basins are presented. Statistical analyses of the effects of acidification or fertilization on Secchi depth were conducted on 10 affected basins.

METHODS

The Secchi disks used at ELA from 1969 to 1980 were 20 cm in diameter and were constructed from aluminum. Each disk was divided into black and white quadrants. The disks from 1981 to 1986 were the same type but constructed of a high density plastic. Each disk had a lead weight attached underneath at the disk's center which made it sink faster and straighter. The line was graduated in 0.2 metre intervals and Secchi depths were measured to the nearest 0.1 m. The Secchi disk was lowered on the shadow side of the boat till it disappeared from view and the depth was noted. The disk was then slowly raised till it reappeared and a mean of the two depths was recorded as the Secchi depth. Secchi depths were usually taken between 0830 and 1200 hrs.

Water colour was determined as the colour of the water against the white background of the disk at one-half the Secchi depth. The observer had choices of pale or clear, green, yellow, orange, brown, turquoise, blue or dark, or a combination of the above. Cloud cover and wind speed were estimated by the observer upon arrival at each lake.

Several statistical methods were used. The first was a modified nested ANOVA to compare trend through time between the annual mean Secchi depth of a manipulated lake with the trend of annual mean Secchi depth of several reference lakes. The reference lakes were L239, L240 and L382. Standard two sample t-tests and linear regression techniques were also used to test differences in annual mean Secchi depths between control and recovery years and manipulated years within each lake.

To determine observer sampling bias (using a 2-sample t-test), 20 Secchi readings were taken simultaneously by two observers on L240 over 80 days during 1986.

Methods of fertilization and acidification at ELA were described by Cruikshank (1984).

RESULTS

Table 1 describes morphologic data on 27 lakes at ELA for which Secchi transparency data has been collected. Open water annual mean Secchi depths are presented in Table 2. Mean monthly Secchi depths are presented in Appendix A and also in graphical form (Fig. 1-5). Examination of the graphs indicates the great degree of variability in Secchi depths from lake-to-lake and within lakes, on a year-to-year, month-to-month basis. One source of variability was thought to be observer error. Table 3 presents Secchi disk readings taken simultaneously by two observers on L240. There was no significant difference ($P > 0.01$) between the mean Secchi depths obtained by these observers. However, since 1968 there have been up to 20 different observers of Secchi transparency at ELA.

It is generally thought that an increase in cloud cover reduces Secchi disk visibility to the observer. Similarly, increasing wind speed over a fetch increases wave amplitude, thereby reducing Secchi transparency. Preisendorfer (1986) used known physics and optical properties of light to develop equations that explain these effects on Secchi transparency. Figure 1 shows Secchi transparency under conditions of no cloud cover to completely overcast for three levels of wind speed. As cloud cover increased, Secchi transparency decreased. There was little difference between wind speeds.

REFERENCE LAKES

Lake 239 (Fig. 2b), a reference lake, had little change in Secchi depth from 1969 to 1983

($\bar{x}$ = 3.7 m). However, in 1984, Secchi depth increased to 4.8 m, decreased to 3.5 m in 1985, and then increased to 4.5 m in 1986. Lake 240 (Fig. 2c), also a reference lake, showed the same pattern. Secchi depth in L240 increased from a mean of 3.8 m (1969-1983) to 4.4 m in 1984, decreased to 3.4 m in 1985 and increased to 4.4 m in 1986. In L382 (Fig. 2a), the other reference lake, Secchi depth decreased from 4.3 m in 1977 to 3.5 m in 1980. The lake was not sampled during 1981 and 1982. Secchi depth increased to 4.4 m in 1984 from 3.8 m in 1983. It then decreased in 1985 (3.6 m) and increased in 1986 (4.4 m). The pattern of a Secchi depth decrease in 1985 with a subsequent increase in 1986 was observed in all lakes at ELA. T-tests and ANOVA indicated no significant differences ($P > 0.05$) between the annual mean Secchi depths of the three reference lakes (L382, L240, L239) for the years 1977 to 1986. An ANOVA showed that Lake 224, another reference lake, was significantly ($P < 0.05$) different from the other reference lake (L382, L240, L239).

FERTILIZED LAKES

Lake 226 was a double basin lake which was separated by a polyethylene curtain into L226NE (Fig. 3b) and L226SW (Fig. 3c). Beginning in 1973, nutrient additions of carbon, nitrogen and phosphorus were made to L226NE and carbon and nitrogen to L226SW. Additions of carbon, nitrogen and phosphorus were made weekly in ratios by weight of 10:5:1, respectively. The same amounts of carbon and nitrogen were added to the SW basin as the NW basin.

In the first year, the NE basin had a decrease in Secchi depth from 3.0 to 1.9 m. Secchi depth remained fairly constant until 1980 when additions ended. Secchi depth then increased to 3.3 m in 1981 and has remained constant through to 1986.

T-tests indicated a significant difference ($P < 0.05$) in mean annual Secchi depths between L226NE fertilized years and L226NE recovery years. There was no significant difference ($P > 0.05$) in mean annual Secchi depth between fertilized years and recovery years in the SW basin. There was no significant difference ($P > 0.05$) in mean annual Secchi depth between basins during recovery years. There was a significant difference ($P \leq 0.05$) during fertilized years between basins. The nested ANOVA indicated a significant difference ($P \leq 0.01$) in the trend of mean annual Secchi depth through time (1974-1986) between L226NW and the three reference lakes (L382, 240, 239). The same result was found for the SW basin ($P \leq 0.05$) versus the reference lakes.

In L227 (Fig. 3a), which has received nitrogen and phosphorus inputs since 1969, Secchi depth decreased from 2.5 m in 1969 to 1.0 m in 1979. Secchi depth remained constant (1.0 m) to 1986. Nitrogen and phosphorus were added from 1975-1986 in the same ratios as L226NW. The ratio by weight of nitrogen to phosphorus from 1969 to 1974 was 14:1 and 5:1 from 1975 to 1986. The nested ANOVA indicated there was a very significant difference ($P \leq 0.005$) in the trend of mean annual Secchi depths between L227 and the reference lakes (L382, L240, L239) through the years 1969 to 1986.

During 1971 and 1972 carbon, nitrogen and phosphorus were added to L304 (Fig. 4b) in ratios by weight of 14:13:1 respectively. Secchi depth decreased from a mean of 2.7 m during control years to a mean of 1.9 m during fertilization. In 1973 and 1974, nitrogen and carbon were added in the same quantities as 1971 and 1972. No phosphorus was added. Secchi depth increased to a mean of 2.6 m. Phosphorus and nitrogen only were added during 1975 and 1976. There was no change in Secchi depth ($\bar{x}$ = 2.5 m). The Secchi depth in the two years following the last additions did not change. (Statistical tests were not practical due to small sample size).

In L261 (Fig. 4c) phosphoric acid only was added from 1973 to 1976 in the same quantities as in L304 during 1971-72. Secchi depth decreased from a mean of 3.2 m during control years to 2.7 m during the 4 years of additions. Secchi depth increased to 3.0 m in each of the recovery years. A t-test indicated no significant difference ($P > 0.05$) between control and fertilized years.

Additions of phosphorus and nitrogen to L303 (Fig. 4a) in 1975 and 1976 caused a decrease in Secchi depth (2.3 m to 1.3 m). The Secchi depth increased to 2.4 m in 1977 when additions stopped. A t-test showed a significant difference ($P < 0.05$) in Secchi depth annual means between fertilized years and control years and fertilized years and recovery years.

Injections of ammonium, carbon and phosphorus were made from 1972 to 1978 to L302N (Fig. 6a) hypolimnion. A slight decrease in Secchi depth was observed (3.3 m in 1971 to as low as 2.7 m in 1975). A t-test indicated no significant ($P < 0.05$) difference in mean annual Secchi depth between L302N and the control L302S during the years of hypolimnetic injections. During 1980 and 1981 no chemical additions were made and there was no significant ($P < 0.05$) difference in Secchi depth between L302N and L302S.

ACIDIFIED LAKES

There was no significant difference ($P > 0.05$) in mean annual Secchi depths in L114 (Fig. 5a) before or since acidification began in 1979. Secchi depths since 1979 (2.1-2.6 m) were only slightly deeper than those prior to acidification (2.0-2.3 m). There was no significant difference ($P > 0.05$) in the trend of mean annual Secchi depth between L114 and reference lakes (L382, L239, L240) through time (1978-1986).

Lake 223 (Fig. 5c) has been acidified since 1976. The pH of the lake was reduced by 0.25 pH units each year until 1980. From 1981 to 1983 the lake's mean epilimnion pH was held relatively constant in the range of 5.02 to 5.13. In 1984, when the recovery phase of the acidification experiment began, the mean epilimnion pH of L223 was increased to 5.44 and held

relatively constant until 1986. Annual mean Secchi disk measurements increased when acidification began from 5.3 in 1976 to 6.1 in 1977. Secchi depth then decreased to 4.? m in 1980, then slowly increased to 1984 (5.1 m). There was another decrease in 1985 (4.1 m) and a subsequent increase in 1986.

A t-test showed no significant difference ($P > 0.05$) in annual mean Secchi depths between L223 control years and acidified years. The time-trend analysis showed a significant difference ($P \leq 0.05$) between annual mean Secchi depths for L223 and the reference lakes (L382, L239, L240) through time (1974-1986). When the reference lake, L224, was included, there was no significant ($P > 0.05$) difference between L223 and the reference lakes.

The trends previously described for L223 were also evident in L224 (Fig. 5b). Lake 224 is a non-manipulated lake 250 m southwest of L223. Secchi depths in L224 increased from 6.3 m in 1974 to 8.2 m in 1977. They then decreased to 6.1 m in 1982 and increased to 7.3 m in 1986. Secchi depth decreased to 6.2 m in 1985. The large degree of variability in L224 made it unsuitable as a reference lake for comparing Secchi depths. Secchi depth comparisons for L223 and L224 gave good correlations ($r = 0.85$). No other lakes at ELA exhibited such large shifts in Secchi depths from year-to-year. Comparisons between L224 and other reference lakes were poor (L382 $r = 0.43$; L239 $r = 0.22$; L240 $r = 0.38$).

Beginning in 1982, nitric acid was added to L302N (Fig. 6a) and sulfuric acid to L302S (Fig. 6b). There was no significant change ($P < 0.05$) in mean annual Secchi depth in L302N between years of hypolimnetic injections and acidified years. The same was observed in L302S between control years and treatment (acidified) years. T-test indicated a significant difference ($P \leq 0.05$) in mean annual Secchi depth between L302N and L302S during the years of acidification (1982-1986). Lake 302S Secchi depth was deeper than L302N. The nested ANOVA showed a significant difference ($P \leq 0.05$) in the trend of mean annual Secchi depth between both L302N and L302S and the reference lakes (L382, L240, L239) over time (1974-1986).

DISCUSSION

The addition of nutrients to ELA lakes appears to have resulted in a decrease in Secchi transparency. The L261 experiment indicated that phosphorus alone does not affect Secchi transparency. Significant decreases in Secchi transparency were observed in L226NW (ΔSecchi = 1.1 m) and in L302 (ΔSecchi = 0.8 m) after carbon, nitrogen and phosphorus were added together. When only carbon and nitrogen were added (L226SW and L304 phase two), there was no decrease in Secchi depth. In L304, Secchi depth increased to pre-addition levels. Nitrogen and phosphorus have been added to L227 for 17 years. A steady decline in Secchi depth has been observed. Similar decreases in Secchi depth were observed in L303 when nitrogen and phosphorus were added.

The only phosphorus and nitrogen experiment that failed to produce a decrease in Secchi depth was the third stage of the L304 experiment. Phosphorus and nitrogen were added for two years and resulted in no significant change in Secchi depth. These additions followed two years of carbon and nitrogen additions and two years of carbon, nitrogen and phosphorus additions.

Whole lake eutrophication experiments at ELA indicate that additions of nutrients, especially phosphorus and nitrogen, will result in a decrease in Secchi transparency. This decrease in Secchi transparency is directly related to the increase in phytoplankton biomass during the period when additional nutrients are available for uptake.

Ten years of sulfuric acid additions to L223 have not resulted in a clear picture as to the effects of pH on Secchi transparency at ELA. Lake 223 Secchi transparency was significantly different from the reference lakes (L382, L240, L239). However, it followed a pattern similar to L224, a reference lake with a highly variable mean annual Secchi depth. Schindler (1980) reported that Secchi transparency increased as pH declined in L223. This was true for the initial three years of the experiment upon which Schindler was reporting. However, the three years following showed a decrease in Secchi depth to pre-addition depths. As Table 4 indicates, there are no biological or physical measurements that correlate well with Secchi depth in L223.

Yan (1983) found Secchi depth to be negatively correlated with pH in Lohi Lake near Sudbury, Ontario. No significant correlation ($r = 0.32$) was found in L223 between Secchi depth and pH nor in L302N ($r = 0.02$) and L302S ($r = 0.13$). All three ELA basins have experienced dramatic pH changes similar to Lohi Lake. There were also no significant correlations between Secchi transparency and chlorophyll ($r = -0.29$ to 0.30), total phosphorus ($r = -0.54$ to -0.27) and phytoplankton biomass ($r = -0.33$ to 0.39) in all three acidified lakes. These observations concurred with those of Yan (1983). Unlike Lohi Lake, none of the three ELA acidified lakes showed correlations between Secchi depth and thermocline depth ($r = -0.02$ to -0.20) and epilimnion depth ($r = -0.18$ to -0.09). There was a strong negative correlation ($r = -0.99$) between Secchi depth and conductivity in L302S and in L302N ($r = -0.85$).

Other factors were thought to be involved in explaining Secchi transparency in L223. Since L224 flows into L223 and the two lakes have similar Secchi depth patterns through time, water renewal was examined. There was no significant correlation between Secchi transparency and water renewal time ($r = 0.33$) and L244 discharge into L223 ($r = -0.06$). None of the chemical or physical parameters examined correlate with annual mean Secchi transparency in the three acidified basins at ELA. These parameters probably do influence Secchi depth but not in a linear manner or on a basis of annual means. Since our Secchi measurements were conducted bi-weekly, many short term events such as algal

blooms could be missed and reduced visibilities not included in the annual means. In 1979, highly visible mats of filamentous algae of the genus Mougeotia appeared and remained until 1984. During the last four years of the experiment, L223 experienced periods of reduced visibility. The lake would be cloudy for periods of 2-3 weeks. The cause has not been determined. Both of these occurrences probably affected Secchi transparency in L223. The appearance of Mougeotia in 1979 coincides with the decrease in Secchi depth in L223.

Lake 223 has large variances in Secchi depth compared to other lakes. In most years you have deep Secchi depths from May to July and very shallow ones in August to October. The resulting annual mean does not reflect accurately what is occurring in L223. Increased annual variations in Secchi depth have occurred in L302S since acidification began.

The three ELA acidified basins have been acidified for short periods of time relative to lakes such as Lohi Lake. The ELA lakes have not had time to develop the extreme oligotrophic status (i.e. water clarity) common to long term acidified lakes such as Lohi Lake.

The only effect decreasing pH has on Secchi depth in ELA lakes is to increase Secchi depth variability.

A factor involved in all Secchi disk measurements is the visual acuity of the observer. An experiment (Table 3) in 1986 indicated that over a period of 80 days and 20 measurements there was no significant difference in the mean Secchi depth determined by each observer. Of particular note, however, were the large differences between observers for the first five readings. It is possible that observers may be subconsciously modifying their Secchi readings towards the values obtained by the other observers. Observers did not know what the other observer obtained until both had completed their measurements. Testing in previous years has indicated Secchi depth measurements varying by 1.2 m between three observers. There have been at least 20 different Secchi observers over the years at ELA. If there are differences in observers, this would explain some of the large deviations seen in the annual mean Secchi depths of ELA lakes.

The Secchi disk reading is an economical, simple and quick method for determining water clarity. There are, however, many factors as pointed out by Preisondorfer (1986) that affect Secchi disk measurements. Observers should be aware that Secchi disk measurements offer an estimate only of water clarity.

ACKNOWLEDGMENTS

D. Schindler, R. Schmidt, R. Reid, E. Matheson and J. Penny supervised the collection of Secchi depth data through 1980. I would like to thank Lillian Wilson and Donna Laroque who typed this report and G. Linsey for the chemistry data. I would also like to thank D. Schindler, K. Patalas, S. Kasian and P. Campbell who offered valuable suggestions. S. Kasian also provided help with statistical analyses.

REFERENCES

ALMER, B., W. DICKSON, C. EKSTROM, E. HORNSTROM, and U. MILLER. 1974. Effects of acidification on Swedish lakes. Ambio 3: 30-36.

BEETON, A.M. 1965. Eutrophication of the St. Lawrence Great Lakes. Limnol. Oceanogr. 10: 240-254.

CARLSON, R.E. 1977. A trophic state index for lakes. Limnol. Oceanogr. 22: 361-369.

CRUIKSHANK, D.R. 1984. Whole lake chemical additions in the Experimental Lakes Area, 1969-1983. Can. Data Rep. Fish. Aquat. Sci. 449: iv + 23 p.

EDMONDSON, W.T. 1970. Phosphorus, nitrogen and algae in Lake Washington after diversion of sewage. Science (Wash., DC) 1969: 690-691.

HASLER, A.D. 1947. Eutrophication of lakes by domestic drainage. Ecology 28: 383-395.

HERGENRADER, G.L. 1980. Eutrophication of the Salt Valley Reservoirs, 1968-1973. II. Changes in physical and chemical parameters of eutrophication. Hydrobiologie 74: 225-240.

HUTCHINSON, G.E. 1957. A treatise on limnology. Vol. 1. Wiley and Sons, Inc., New York. 1115 p.

LORENZEN, M.W. 1980. Use of chlorophyll-Secchi disk relationships. Limnol. Oceanogr. 25: 371-372.

MEGARD, R.O., J.C. SETTLES, H.A. BOYER, AND W.S. COMBAJE. 1980. Light, Secchi disks, and trophic states. Limnol. Oceanogr. 25: 373-377.

PREISONDORFER, R.W. 1986. Secchi disk science: visual optics of natural waters. Limnol. Oceanogr. 31: 909-926.

TYLER, J.E. 1968. The Secchi disc. Limnol. Oceanogr. 13: 1-6.

WETZEL, R.G. 1975. Limnology. W.B. Saunders Company, Toronto. p. 60-65.

YAN, N.D. 1983. Effects of changes in pH on transparency and thermal regimes of Lohi Lake, near Sudbury, Ontario. Can. J. Fish. Aquat. Sci. 40: 621-626.

Table 1. Physical characteristics of selected ELA lakes.

Lake	Area (10^4 m^2)	Volume (10^5 m^3)	Mean depth (m)	Max depth (m)	Mean thermocline depth (July) (m)
93	5.32	2.2	4.1	8.3	NA
103	2.30	NA	NA	2.4	NA
109	15.47	9.4	6.1	10.3	5.95
110	5.28	2.6	4.9	13.0	4.80
114	12.10	2.1	1.7	5.0	NT
120	9.31	7.0	7.5	19.0	4.44
222	16.39	6.0	3.7	5.8	3.10
223	27.27	19.5	7.1	14.4	5.85
224	25.92	30.1	11.6	27.4	6.28
226N	8.33	4.7	5.7	14.7	4.18
226S	7.77	4.9	6.3	11.6	4.20
227	5.00	2.2	4.4	10.0	2.68
230	1.67	1.0	5.9	13.6	2.96
239	56.10	59.1	10.5	30.4	4.96
240	44.10	26.7	6.1	13.1	5.30
271	5.57	1.6	2.9	9.6	3.42
302N	12.80	7.3	5.7	13.8	4.51
302S	10.90	5.5	5.0	10.6	5.21
303	9.93	1.5	1.5	2.5	NT
304	3.62	1.2	3.3	6.7	3.16
305	52.00	78.6	15.1	32.7	6.51
373	27.98	29.8	10.7	20.0	5.95
374	509.43	1068.0	21.0	52.0	10.10
382	37.08	21.1	5.2	13.0	4.49
383	5.55	2.6	4.6	9.7	3.30
623	35.95	23.7	6.6	21.0	4.80
629	62.53	52.7	8.4	20.0	5.95

Table 2. Open water annual mean Secchi depths, 1969-1986 and 95% confidence limits.

	1969		1970		1971		1972		1973		1974		1975		1976		1977		1978		1979		1980		1981		1982		1983		1984		1985		1986	
Lake	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%	$\bar{x}$	±95%
93																															3.4	0.6	2.7	0.6		
103									2.1	0.8	2.0	0.2	1.2	0.1																						
109																													4.5	0.5	4.7	0.6	4.2	0.4	5.4	0.8
110																													3.9	0.5	4.0	0.7	3.1	0.5	4.5	0.7
114					2.1	0.6					2.4	0.6							1.9	0.5	2.2	1.0	2.5	0.9	2.1	0.4	2.2	0.4	2.6	0.5	2.5	0.6	2.0	0.3	2.6	1.2
120	5.6	1.0			4.4	0.6	4.2	0.7			4.0	0.6																								
222																							3.0	0.6	2.4	0.6	2.5	0.6	2.2	0.5	2.8	0.3	1.8	0.3	2.3	0.3
223											5.1	1.1	4.6	1.0	5.3	0.7	6.1	0.5	5.8	0.6	5.6	1.6	4.2	0.8	4.7	1.0	4.8	0.9	5.0	0.5	5.1	1.1	4.1	0.3	4.7	0.4
224											6.3	0.5	7.0	1.0	7.4	0.4	8.0	0.5	8.2	0.7					7.1	0.4	6.1	0.5	7.0	1.1	7.1	1.2	6.2	0.6	7.3	0.4
226N					3.8	1.0			3.0	0.6	1.9	0.4	1.9	0.4	2.5	0.5	2.5	0.5	2.0	0.6	2.0	0.7	1.8	0.9	3.3	0.3	3.2	0.2			3.7	0.4	3.0	0.3	3.4	0.2
226S									3.8	0.5	3.4	0.3	3.2	0.2	3.4	0.4	2.7	0.3	3.6	0.6	3.4	0.6	2.4	0.6	3.4	0.3	3.2	0.3			3.8	0.5	3.3	0.3	3.5	0.2
227	2.5	0.7	2.0	0.4	1.9	0.4	1.0	0.3	1.5	0.4	1.1	0.4	1.6	0.3	1.8	0.5	1.6	0.3	1.7	0.6	1.0	0.3	0.6	0.3	1.0	0.2	0.8	0.4	1.3	0.2	1.0	0.3	1.0	0.3	1.2	0.1
230	3.8	2.1	3.9	1.0	4.7	0.7	3.4	2.0					3.3	0.6	3.2	0.8																				
239	4.0	0.9	3.9	0.3	3.7	0.4	3.5	0.3	3.9	0.3	3.2	0.5	3.5	0.4	3.6	0.3	3.6	0.6	3.7	0.8	3.8	0.6	3.6	0.8	3.6	0.3	3.7	0.3	3.5	0.9	4.8	0.5	3.5	0.3	4.5	0.4
240	3.8	0.3	3.6	0.3	3.7	0.4	3.8	0.6			3.4		3.6	0.3	4.0	0.2	3.7	0.3	3.8	0.3					3.9	0.5	3.7	0.4	4.0	0.7	4.4	0.6	3.4	0.3	4.4	0.4
261			3.6		3.3	0.5	2.7	0.6	2.5	0.3	2.6	0.3	2.7	0.2	3.1	0.3	3.0	0.5	3.0	0.6																
302N							3.7	0.4	3.5	0.4	2.9	0.4	3.2	0.4	3.0	0.4			3.4	0.6			3.2	0.5	3.5	0.4	3.1	0.6	3.3	0.4	3.4	0.3	2.0	0.3	3.6	0.5
302S							3.7	0.4	3.7	0.5	2.9	0.6	3.6	0.3	4.1	0.4			4.2	0.9			3.9	0.5	3.5	0.4	4.0	0.4	4.5	0.9	4.0	0.7	3.2	0.4	4.0	0.8
303	2.1	0.1	2.4	0.3	2.4	0.2							1.1	0.2	1.4	0.4	2.4	0.4	2.2	0.3																
304	2.5	0.4	2.8	0.3	1.6	0.3	2.2	1.3	2.3	0.3	2.8	0.5	2.8	0.5	2.2	0.6	2.6	0.4															2.0	0.4	2.5	0.3
305	7.9	0.6			7.5	0.9					6.7	1.2																					5.4	0.5	7.0	0.8
373																													7.3	0.8	7.4	0.9	6.2	0.6	7.2	0.7
374																													6.8	1.7	6.2	0.8	5.8	0.6	6.8	0.4
382																	4.3	0.6	3.9	0.8	4.0	0.4	3.5	0.7					3.8	0.5	4.4	0.5	3.6	0.4	4.4	0.4
383										2.8	0.6	3.5	0.5																							
623																													5.1	0.7	5.3	0.8	4.3	0.4		
629																													4.4	0.7	4.8	0.9	4.0	0.4		

Table 3. Lake 240 Secchi depths (observer bias experiment).

Date (1986)	Observer A[1] (m)	Observer B[2] (m)	Cloud cover[3] (N/10)	Wind speed (kmph)	Water colour
June 10	4.0	3.7	10	15-20	yellow
June 11	4.2	3.7	8	15-20	"
June 12	4.8	3.3	7	20-25	"
June 17	5.2	4.7	1	nil	"
June 18	4.0	4.9	2	0.5	"
June 19	4.6	4.4	3	10-15	"
June 23	3.5	3.5	10	20-25	"
June 24	4.4	4.2	4	0-5	"
June 30	3.8	3.8	5	10-15	"
July 3	3.8	4.5	4.5	25-30	"
July 8	4.4	4.3	6	10-15	"
July 28	5.0	4.5	10	5-10	"
Aug 6	4.5	4.5	5	5-10	"
Aug 7	4.6	4.4	8	5-10	"
Aug 13	4.8	4.8	10	5-10	"
Aug 21	4.9	5.0	1	0-5	"
Aug 25	4.4	4.0	10	20-25	"
Aug 26	3.6	4.0	9	25-30	"
Aug 27	4.4	3.8	8	10-15	"
Aug 28	4.3	4.3	5	15-20	"
Mean	4.36	4.21			
Standard deviation	0.47	0.48			
Maximum	5.2	5.0			
Minimum	3.6	3.3			

[1] Observer A had 8 months experience in Secchi readings prior to experiment.

[2] Observer B had 6 years experience.

[3] Cloud cover, wind speed and water colour were determined to be the same by both observers.

Table 4. EPI open water physical and chemical characteristics of L223, L302S and L302N. r = correlation coefficient between Secchi depth and indicated characteristic.

Lake	Year	Sechi depth (m)	pH	Conductivity (µS•cm)	Chlorophyll (µg•L)	Total P (µg L)	Thermocline (m)	EPI depth (m)	Water renewal (yr)	Mean annual phytoplankton biomass ($mg \cdot m^3$)
223	1974	5.1	6.71	22.1	1.9	6.62	5.42	5.81		683
	1975	4.6	6.71	20.7	1.7	6.75	6.67	6.36		648
	1976	5.3	6.49	24.1	2.2	5.42	6.81	6.47	8.8	901
	1977	6.1	6.13	27.7	2.7	6.34	7.27	6.01	6.9	1078
	1978	5.8	5.93	27.4	2.4	5.89	6.06	5.46	3.6	1091
	1979	5.6	5.64	30.1	5.7	5.24	7.55	7.21	5.3	907
	1980	4.2	5.59	32.5	3.0	5.80	8.43	8.03	20.5	1969
	1981	4.7	5.02	37.5	2.5	6.01	7.68	6.67	11.6	1621
	1982	4.8	5.09	38.9	4.6	6.75	7.30	6.96	4.4	1364
	1983	5.0	5.13	38.5	2.8	6.80	7.07	6.64	10.7	1505
	1984	5.1	5.44	35.9	4.3	9.16	6.71	6.33	15.6	1789
	1985	4.1	5.53	35.5	1.5	9.00	5.3	5.15	2.2	1125
	1986	4.7	5.45	36.7	1.4	6.00	7.0	5.93		1366
	r		-0.32	-0.35	0.30	-0.35	-0.02	-0.18	0.33	-0.35
L302S	1980	3.0	6.60	22.2	5.3	8	6.40	6.01		1240
	1981	3.5	6.75	22.8	3.1	8	6.30	4.86	8.8	1901
	1982	4.0	6.25	25.4	3.3	7	5.46	4.61	3.7	1524
	1983	4.5	5.86	27.8	2.0	8	6.35	6.23	7.8	1485
	1984	4.0	5.60	29.9	4.1	12	6.50	5.91	7.8	2367
	1985	2.2	5.31	31.3	3.2	10	5.5	4.86	2.6	3035
	1986	4.0	5.02	35.4	3.2	7	6.40	5.74		3192
	r		0.13	-0.99	-0.29	-0.27	0.18	-0.19	0.42	0.03
L302N	1980	3.2	6.49	22.0	7.0	12	6.02	5.40		1184
	1981	3.5	6.63	24.7	2.0	7	5.69	5.12	12.6	2241
	1982	3.1	6.71	23.5	3.4	5	5.81	4.90	5.3	2213
	1983	3.3	6.34	24.8	3.7	13	4.97	4.75	11.2	2090
	1984	3.4	6.24	26.9	3.6	13	5.76	4.81	11.1	2342
	1985	2.9	6.02	27.8	3.5	13	4.1	4.26	3.6	2062
	1986	3.6		28.5	2.6	9	5.0	4.82		2436
	r		-0.02	-0.85	-0.13	-0.59	0.20	-0.09	0.97	0.39

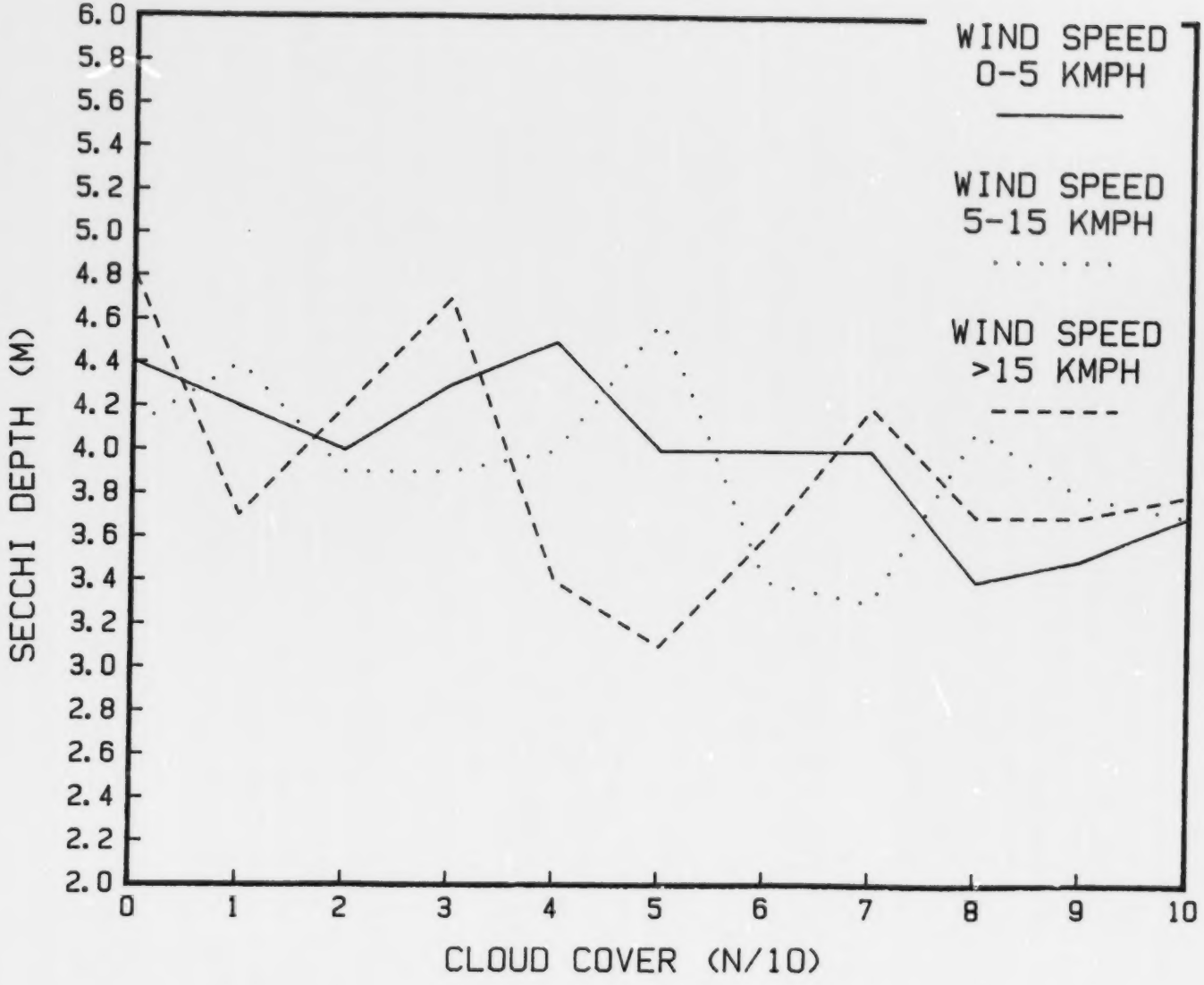

FIG. 1. Secchi depth (L239, L240, L382) vs cloud cover for three variable wind speeds.

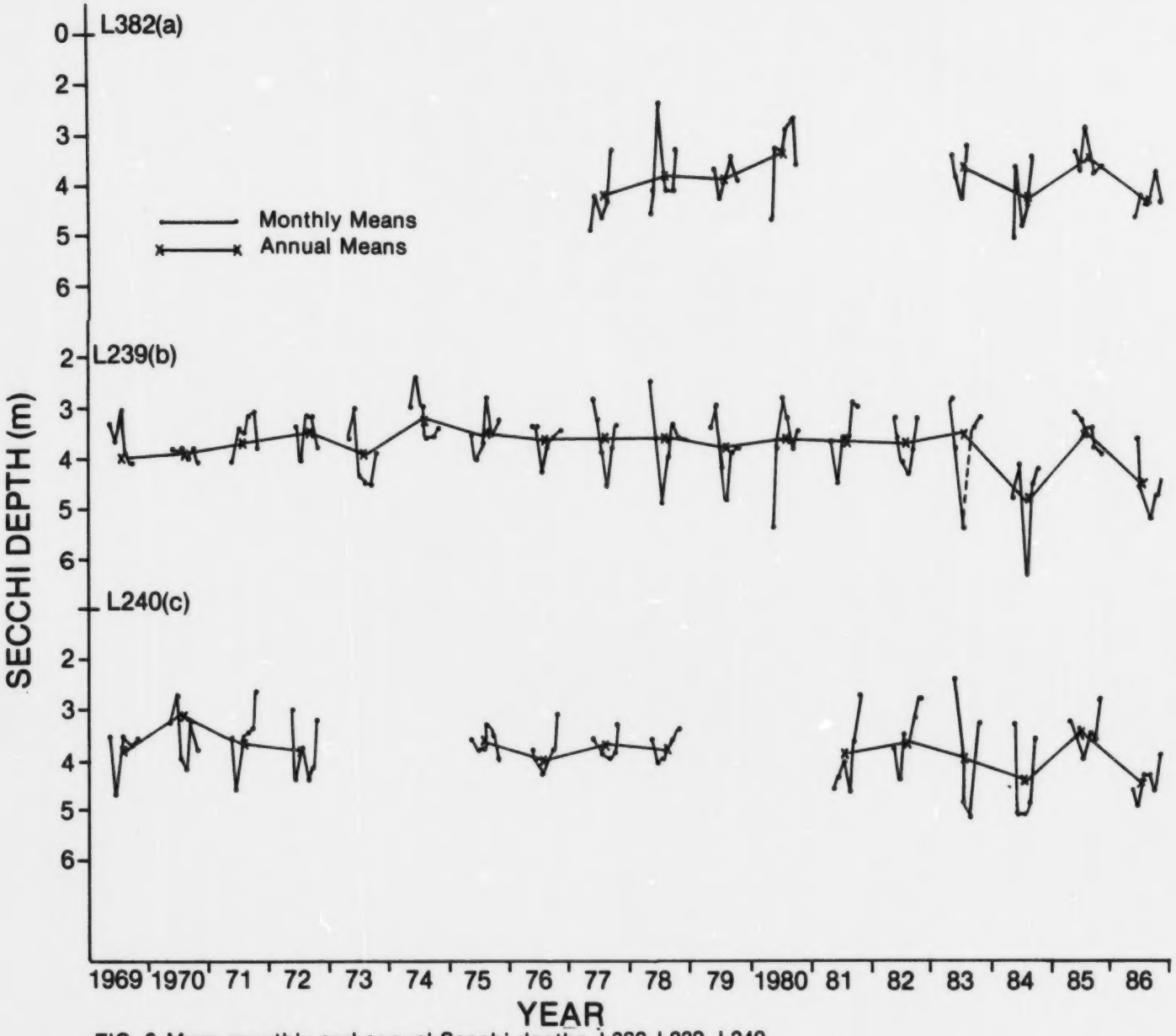

FIG. 2. Mean monthly and annual Secchi depths L382 L239, L240.

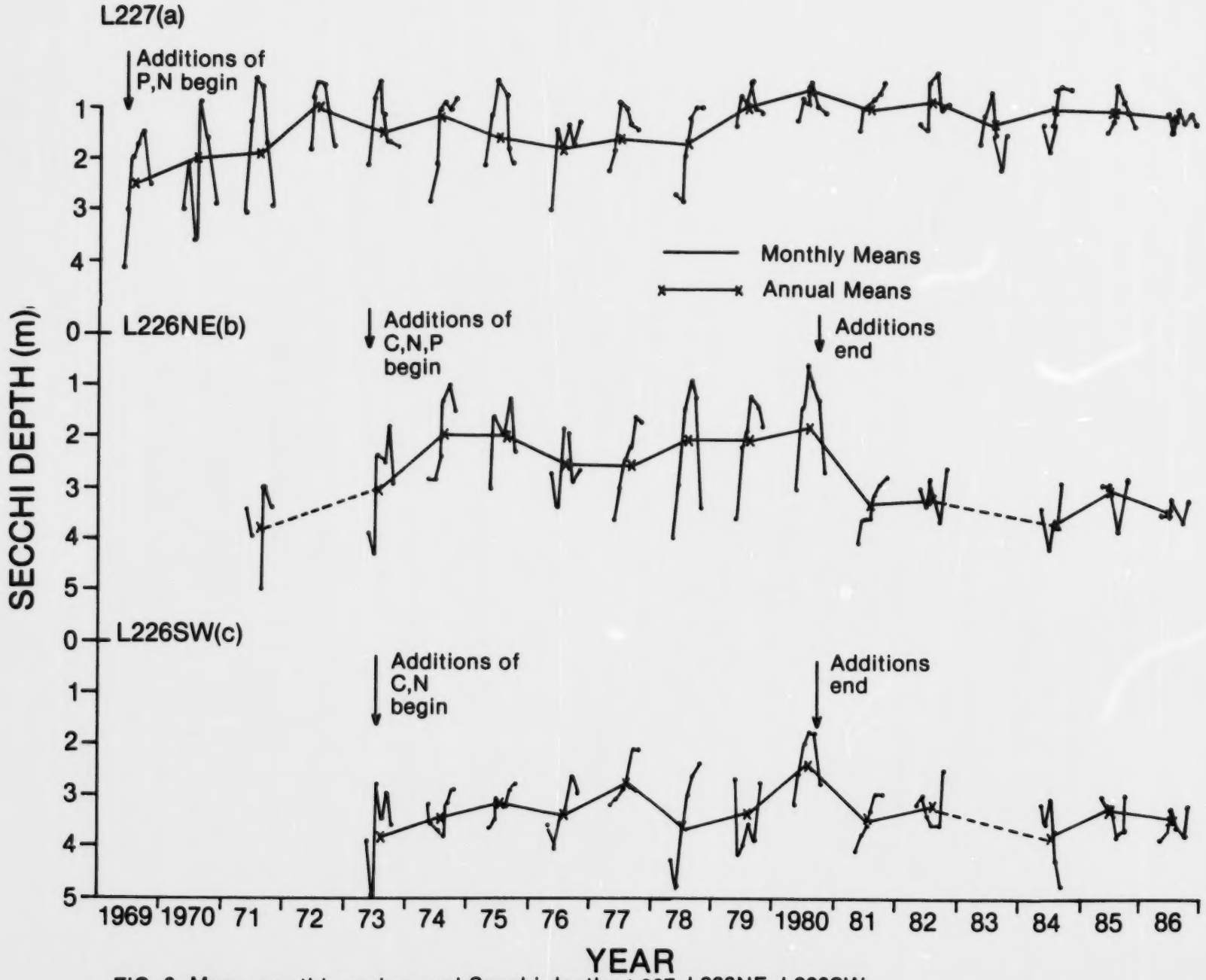

FIG. 3. Mean monthly and annual Secchi depths L227, L226NE, L226SW.

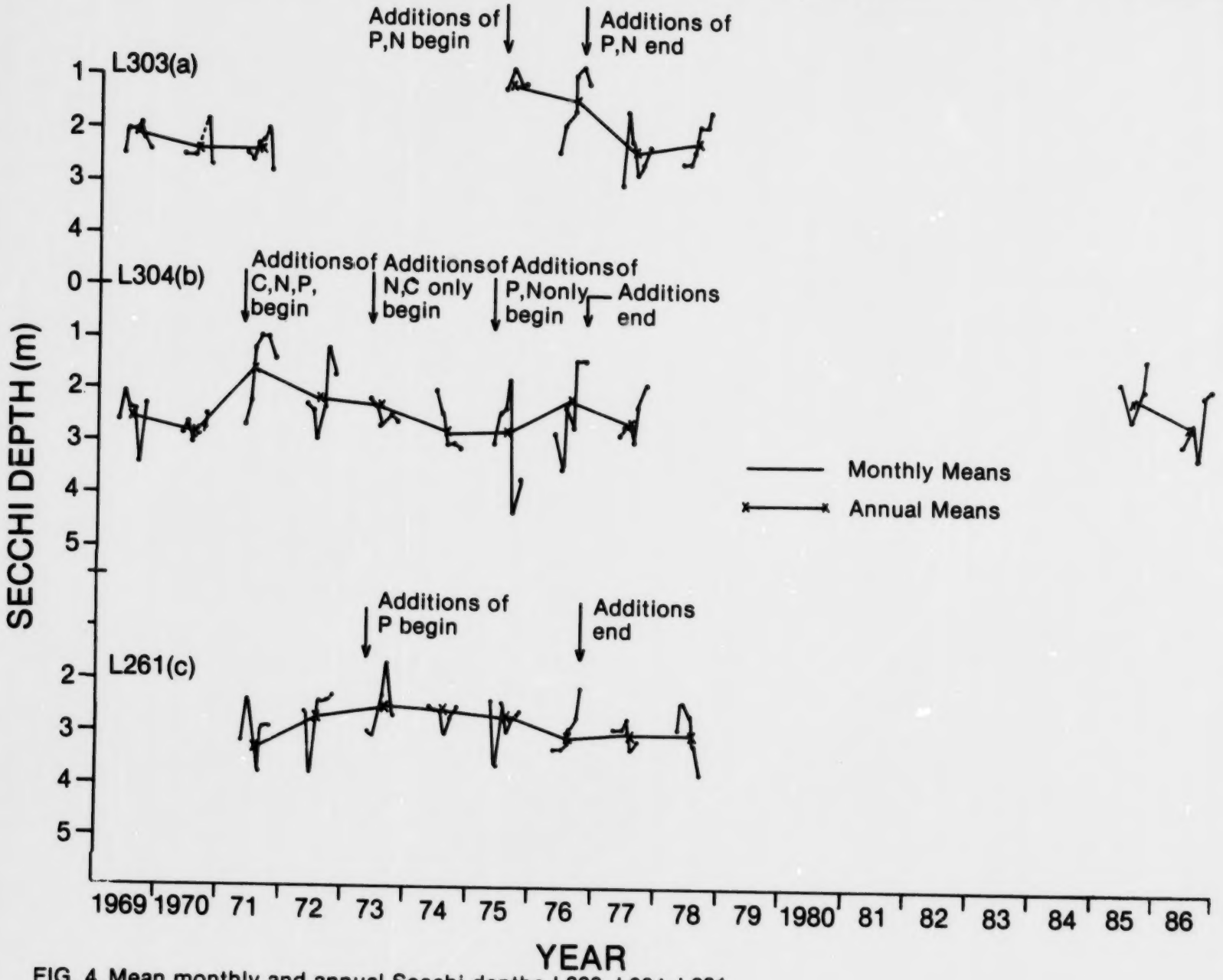
Additions of P,N begin
Additions of P,N end
L303(a)
L304(b)
Additions of C,N,P, begin
Additions of N,C only begin
Additions of P,N only begin
Additions end
L261(c)
Additions of P begin
Additions end
Monthly Means
Annual Means
SECCHI DEPTH (m)
1 2 3 4 0 1 2 3 4 5 2 3 4 5
1969 1970 71 72 73 74 75 76 77 78 79 1980 81 82 83 84 85 86
YEAR

FIG. 4. Mean monthly and annual Secchi depths L303, L304, L261.

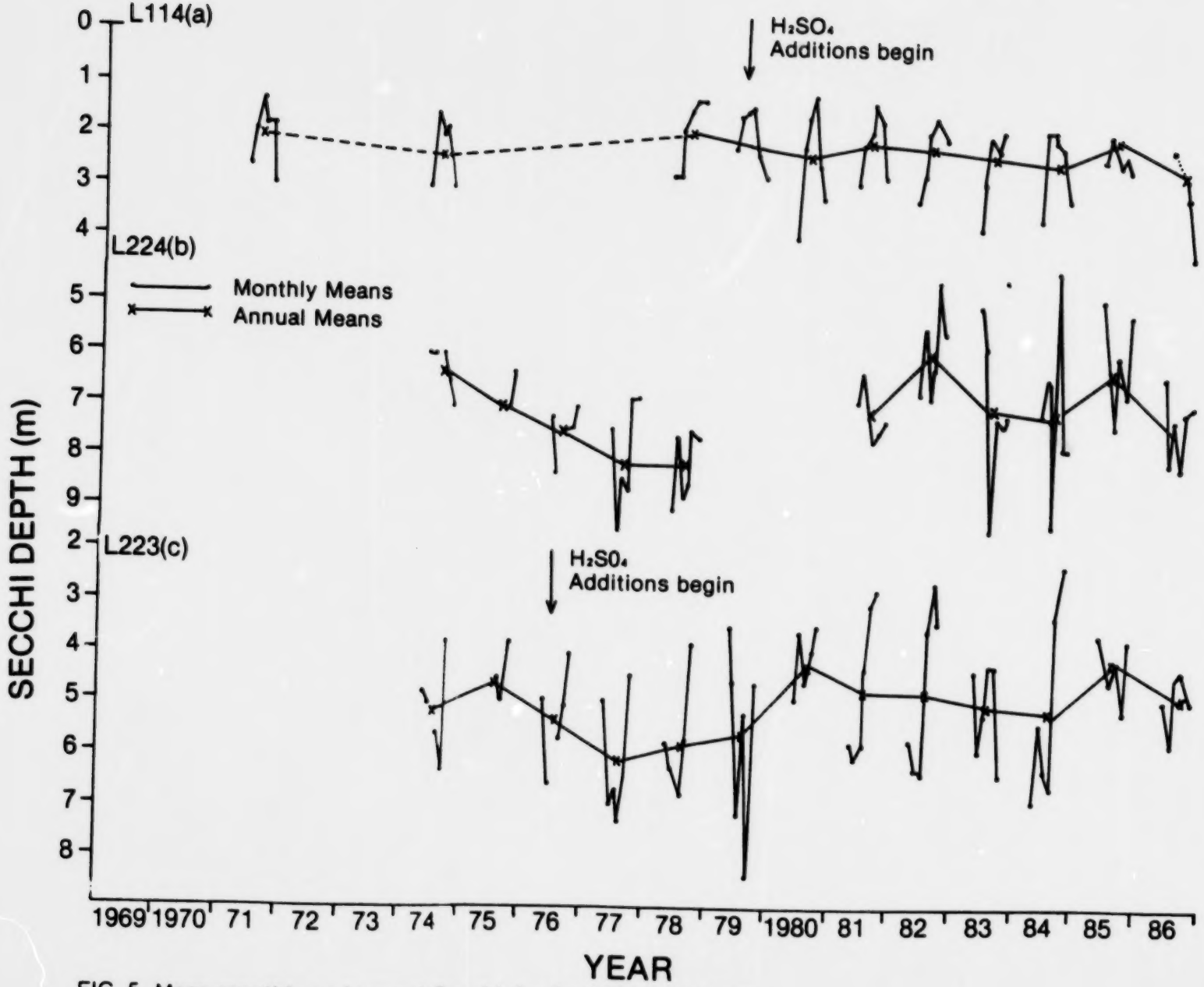

FIG. 5. Mean monthly and annual Secchi depths L114, L224,L223.

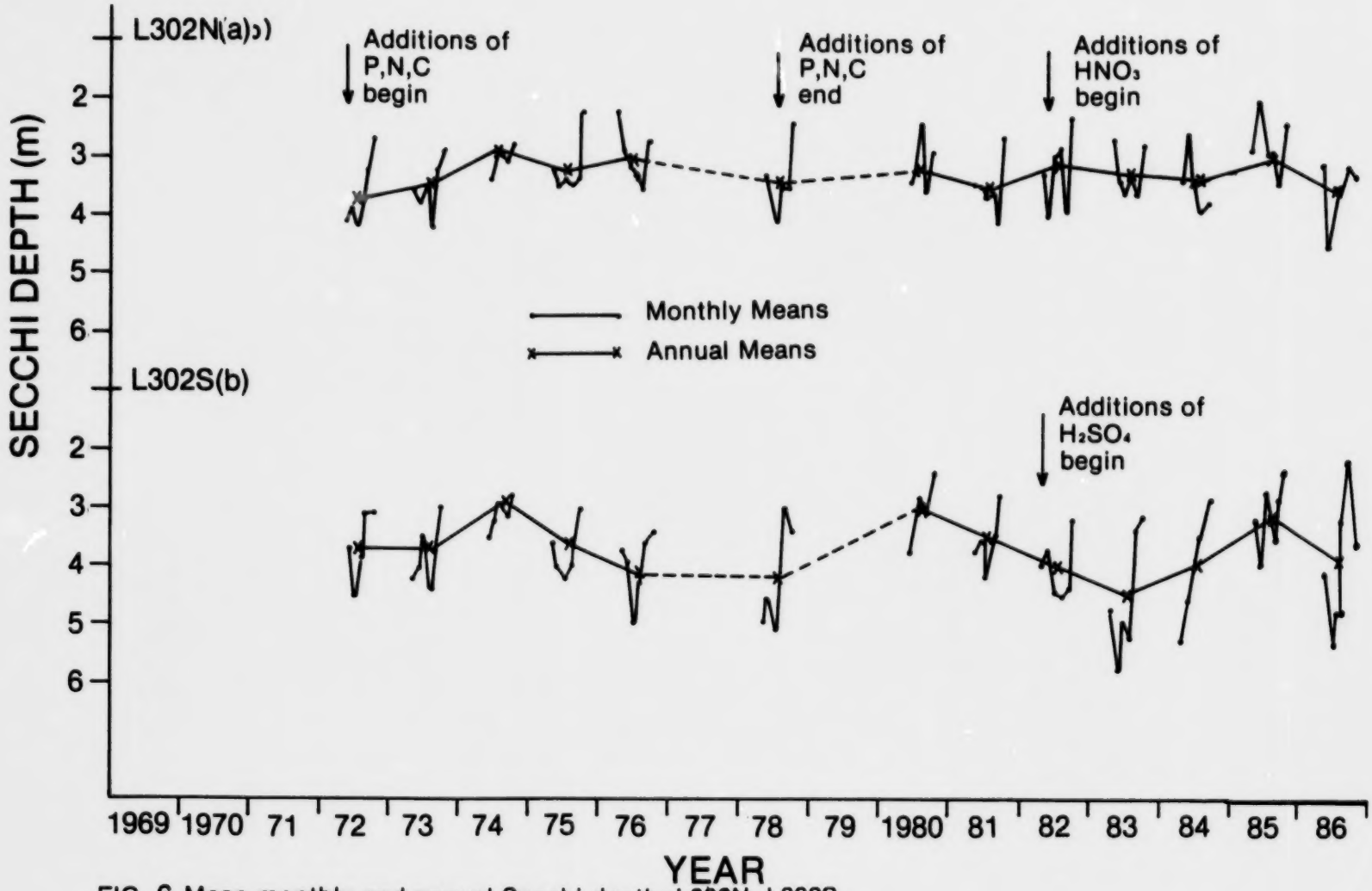

FIG. 6. Mean monthly and annual Secchi depths L302N, L302S.

Appendix A. Mean monthly Secchi depths.

Lake 93			Lake 109					Lake 110				
Month	84	85	Month	83	84	85	86	Month	83	84	85	86
May		2.5	May	4.6	4.8	3.8	6.5	May	4.3	3.7	2.3	4.2
Jun	4.0	3.0	Jun	4.4	5.4	3.9	6.4	Jun	3.5	4.2	2.5	4.2
Jul	3.3	3.1	Jul	4.4	4.8	4.7	6.0	Jul	3.9	3.6	3.0	5.0
Aug	4.0	3.1	Aug	5.3	4.7	4.6	5.7	Aug	5.0	3.4	3.9	5.0
Sep	2.4	2.8	Sep	4.2	4.5	4.2	4.0	Sep	3.5	4.7	3.7	4.9
Oct	2.4	1.6	Oct	3.2	4.0	3.5	4.1	Oct	3.4	3.0	3.0	4.1

Lake 114											
Month	71	74	78	79	80	81	82	83	84	85	86
May	2.6	3.0	2.8	2.2	4.0	2.9	3.2	3.8	3.6	2.3	
Jun	2.0	1.6	2.8	1.6	2.2	2.2	2.7	2.9	1.8	1.8	2.1
Jul	1.3	2.0	1.8	1.5	1.6	1.9	1.9	2.0	1.8	2.0	
Aug	1.8	1.9	1.5	1.4	1.2	1.3	1.6	2.2	2.1	2.4	
Sep	1.8	2.5	1.3	2.4	2.6	1.7	1.8	1.9	2.2	2.2	3.0
Oct	3.0	3.1	1.3	2.8	3.2	2.8	2.0		3.2	2.5	4.2

Lake 222							
Month	80	81	82	83	84	85	86
May	3.2	2.4	2.6	2.1	1.9	1.9	2.8
Jun	3.8	2.6	3.0	2.8	3.1	1.7	2.7
Jul	3.0	2.6	2.6	2.2	3.0	1.5	1.6
Aug	3.2	2.4	3.2	2.8	3.1	1.9	2.6
Sep	2.5	2.8	2.4	2.2	2.8	2.7	2.2
Oct	2.1	1.5	1.4	1.4		1.0	2.2

Appendix A. Cont'd.

Lake 223

Month	74	75	76	77	78	79	80	81	82	83	84	85	86
May	4.8		4.9	4.9	5.8	3.5		5.8	5.7	4.3	6.9	3.5	4.8
Jun	5.0	5.2	6.6	7.0	6.3	4.6	4.9	6.1	6.3	5.9	5.4	4.1	5.6
Jul				6.7	6.5	7.2	3.6	5.8	6.4	5.1	6.3	4.4	4.3
Aug	5.6	4.5	5.7	7.3	6.8	5.2	4.6	4.3	3.6	4.2	6.6	4.1	4.2
Sep	6.3	5.0	5.1	6.4	5.7	8.4	4.0	3.0	2.6	4.2	3.3	5.0	4.5
Oct	3.8	3.8	4.0	4.4	3.8	4.6	3.5	2.8	3.4	6.4	2.3	3.6	4.8

Lake 224

Month	74	75	76	77	78	81	82	83	84	85	86
May	6.0		7.2	7.4	9.0	6.9	6.7	5.0	7.1	4.8	6.3
Jun	6.0	7.8	8.3	9.5	7.6	6.3	5.4	5.8	6.4	6.1	8.0
Jul				8.4	8.8	7.0	6.8	9.4	9.3	7.3	7.2
Aug	6.0	7.0	7.4	8.6	8.5	7.6	6.2	7.2	4.3	5.9	8.1
Sep	6.5	7.0	7.4	6.8	7.5	7.5	4.5	7.3	7.7	6.7	7.0
Oct	7.0	6.3	7.0	6.8	7.6	7.3	5.5	7.1	7.7	5.1	6.9

Lake 226NE

Month	71	73	74	75	76	77	78	79	80	81	82	84	85	86
May	3.4	3.9	2.8	3.0	2.7	3.6	4.0	3.6	3.0	4.2	3.0	3.4	2.9	3.5
Jun	4.0	4.3	2.8	1.6	3.4	3.0	2.9	2.2	1.4	3.6	3.3	4.2	2.9	3.5
Jul		2.4	2.4	1.8	1.8	2.4	1.4	1.9	0.6	3.6	2.8	3.6	3.3	3.2
Aug	5.0	2.5	1.3	2.0	1.9	2.2	0.9	1.2	1.0	3.1	3.3	4.3	3.8	3.4
Sep	3.0	1.8	1.0	1.2	2.9	1.6	1.2	1.4	1.3	2.9	3.6	2.9	3.4	3.6
Oct	3.4	2.9	1.5	2.3	2.6	1.7	3.4	1.8	2.7	2.8	2.6		2.8	3.2

Appendix A. Cont'd.

Lake 226SW

Month	73	74	75	76	77	78	79	80	81	82	84	85	86
May	3.9	3.2	3.7	3.6	3.2	4.3	2.7	3.2	4.1	3.2	3.2	3.0	3.9
Jun	5.0	3.6	3.5	4.1	3.1	4.8	4.2	2.6	3.8	3.0	3.6	3.2	3.7
Jul	2.8	3.7	3.1	3.4	2.9	3.6	4.0	2.0	3.6	3.4	3.1	3.2	3.3
Aug	3.5	3.8	3.3	3.5	2.6	3.0	3.6	1.8	3.3	3.6	4.3	3.8	3.6
Sep	3.0	3.1	2.9	2.7	2.1	2.6	3.9	1.8	3.0	3.6	4.8	3.7	3.7
Oct	3.6	2.9	2.8	3.0	2.1	2.4	2.8	2.8	2.8	3.0	2.5	3.0	3.2

Lake 227

Month	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
May	4.1	3.0	3.1	1.8	2.1	2.8	2.1	3.0	2.2	2.7	1.3	1.2	1.4	1.3	1.7	1.3	3.1	3.6
Jun	3.0	2.1	1.3	0.8	0.8	2.1	1.1	1.4	1.8	2.8	0.8	0.8	1.0	1.4	1.1	1.8	3.2	4.4
Jul	1.9	3.6	0.5	0.5	0.5	1.0	0.5	1.9	0.9	1.9	0.9	0.9	0.9	0.5	0.7	1.3	3.4	4.9
Aug	1.7	0.9	0.6	0.6	1.1	0.9	0.8	1.3	1.0	1.2	0.5	0.5	0.8	0.3	1.5	0.6	3.4	5.2
Sep	1.5	1.6	1.7	1.1	1.7	1.0	1.8	1.7	1.3	1.0	1.0	1.0	0.7	1.0	2.2	0.6	3.8	4.7
Oct	2.5	2.9	2.9	1.7	1.8	0.8	2.1	1.3	1.4	1.0	1.1	1.1	0.5	0.9	1.5	0.6	3.9	4.4

Lake 228

Month	70	71	72	74
May		14.0		
Jun		13.5		8.8
Jul	10.3	10.8	12.5	9.8
Aug		11.0	11.2	8.0
Sep				8.3
Oct		9.8		22.0

Lake 230

Month	68	69	70	71	72	75	76
May					4.1		1.9
Jun	3.9	2.4		4.1	4.3	4.0	3.4
Jul	4.9	5.4		4.3	4.3	3.9	
Aug				5.5	4.2	2.8	3.3
Sep		3.1	3.9	5.0	3.3	2.8	3.8
		4.2		4.6	3.2	3.3	3.8

Appendix A. Cont'd.

Lake 239

Month	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
May	3.3	3.8	4.1		3.6	3.0	3.6	3.4	2.9	2.5	3.4	5.4	3.7	3.2	2.8	4.8	3.1	3.6
Jun	3.7	3.9	3.4	3.4	3.0	2.4	4.0	3.4	3.2	3.6	3.0	3.8	4.5	3.6	3.8	4.2	3.1	4.4
Jul	3.0	3.8	3.5	4.1	4.4	3.0	3.7	4.3	3.9	4.9	4.2	2.8	3.6	4.1	5.4	4.9	3.4	4.9
Aug	4.0	4.0	3.2	3.2	4.5	3.6	2.8	3.7	4.6	4.0	4.8	3.2	3.6	4.3		6.3	3.4	5.2
Sep	4.1	3.8	3.1	3.2	4.5	3.6	3.5	3.6	3.8	3.4	3.9	3.8	2.9	3.4	3.4	4.5	3.8	4.7
Oct		4.1	3.8	3.8	3.9	3.5	3.3	3.5	3.4	3.6	3.8	3.5	3.0	3.2	3.2	4.2	3.9	4.4

Lake 240

Month	69	70	71	72	74	75	76	77	78	81	82	83	84	85	86
May	3.5	3.2	3.6	3.0		3.6	3.8	3.6	3.6	4.6	3.8	2.4	3.3	3.3	4.6
Jun	4.7	2.7	4.6	4.4	3.4	3.8	4.1	3.7	4.1	4.4	4.4	3.6	5.1	3.6	4.9
Jul	3.5	4.0	3.6	3.7		3.8	4.3	3.9	4.0	4.0	3.5	4.9	5.1	4.0	4.3
Aug	3.8	4.2	3.5	4.4		3.3	4.0	4.0	3.8	4.6	3.8	5.2	4.9	3.4	4.3
Sep	3.7	3.3	3.4	4.2		3.5	3.8	3.9	3.6	3.6	3.2	4.0	3.6	3.5	4.6
Oct	3.6	3.8	2.6	3.2		4.0	3.1	3.3	3.4	2.7	2.8	3.3		2.8	3.9

Lake 261

Month	71	72	73	74	75	76	77	78
May	3.2	2.6	3.0	2.5	2.4	3.3	2.9	2.9
Jun	2.4	3.8	3.1	2.6	3.6	3.3	2.9	2.4
Jul	3.3	2.7	2.6	2.6	2.4	3.2	2.7	2.6
Aug	3.8	2.4	2.3	3.0	3.0	2.9	3.3	3.2
Sep	3.4	2.4	1.7	2.7	2.7	2.7	3.1	3.8
Oct	3.4	2.3	2.7	2.5	2.6	2.1		

Appendix A. Cont'd.

Lake 302N

Month	72	73	74	75	76	78	80	81	82	83	84	85	86
May	4.1	3.6		3.2	2.2	3.3		3.4	3.3	2.7	3.4	2.1	3.2
Jun	3.9	3.8	3.4	3.5	2.9	3.5	3.4	3.5	4.0	3.4	2.6	2.1	4.6
Jul	4.2	3.5	3.0	3.4	3.2	4.1	3.2	3.7	3.0	3.6	3.5	3.1	3.8
Aug	3.8	4.2	3.0	3.5	3.3	3.4	2.4	3.5	2.8	3.3	3.9	3.0	3.7
Sep	3.2	3.2	3.1	3.4	3.6	3.5	3.6	4.1	3.9	3.6	3.8	3.5	3.2
Oct	2.7	2.9	2.8	2.2	2.7	2.4	2.9	2.7	2.3	2.8		2.5	3.3

L302S

Month	72	73	74	75	76	78	80	81	82	83	84	85	86
May		4.2		3.6	3.7	5.0		3.8	4.0	4.8	5.3	3.6	4.2
Jun	3.7	4.0	3.6	4.0	3.9	4.6	3.8	3.6	3.7	5.8	4.6	4.0	5.4
Jul	4.5	3.5	3.3	4.3	5.0	5.1	3.2	4.2	4.5	5.0	4.0	2.8	5.1
Aug	3.9	4.4	3.0	4.0	4.3	4.2	2.8	3.6	4.5	5.3	3.5	3.6	3.2
Sep	3.1	3.7	3.2	3.6	3.6	3.0	3.0	3.5	4.4	3.4	2.4	2.9	2.2
Oct	3.1	3.0	2.8	3.0	3.4	3.4	2.4	2.7	3.2	3.2		2.4	3.7

L303

Month	69	70	71	75	76	77	78
May	2.5	2.5	2.5		2.4	3.0	2.6
Jun	2.0	2.5	2.6		1.9	1.6	2.6
Jul	2.0	2.5	2.3	1.2	2.7	2.2	2.4
Aug	1.9		2.2	0.8	0.9	2.8	1.9
Sep	2.2	1.8	2.0	1.1	0.8	2.6	1.9
Oct	2.4	2.7	2.8	1.1	1.1	2.3	1.6

Appendix A. Cont'd.

Lake 304

Month	69	70	71	72	73	74	75	76	77	85	86
May	2.6	2.9	2.7	2.3	2.2		3.0	2.8	2.8	1.7	2.9
Jun	2.1	2.6	2.2	2.4	2.3	2.0	2.4	3.4	2.7	2.1	2.6
Jul	2.4	3.0	1.2	2.9	2.7	2.4	2.3	2.3	2.7	2.4	2.6
Aug	2.4		1.0	2.3		3.0	1.8	2.7	2.9	2.1	3.1
Sep	3.4	2.8	1.0	1.3	2.5	3.0	4.3	1.4	2.3	1.8	1.9
Oct	2.3	2.5	1.4	1.7	2.6	3.1	3.7	1.4	1.9	1.3	1.8

Lake 305

Month	68	69	71	74	85	86
May		7.0	8.0	5.5	4.1	6.9
Jun	5.7	6.5	6.3	4.8	5.8	5.6
Jul	6.9	8.0	6.8	7.5	5.4	8.5
Aug		9.5	6.2	7.8	5.8	7.5
Sep		7.5	8.6	7.0	6.3	6.7
Oct		8.0	7.8	8.5	4.4	6.7
Nov	5.5	8.0		6.1		

Lake 373

Month	83	84	85	86
May	6.5	5.4	6.4	6.2
Jun	7.3	7.2	6.6	7.8
Jul	8.5	8.9	6.8	7.8
Aug	7.1	7.6	6.5	7.8
Sep	7.4	8.7	6.6	6.8
Oct	5.8	6.8	4.9	6.6

Lake 374

Month	83	84	85	86
May		5.2	4.7	7.1
Jun		6.3	4.8	6.4
Jul		5.2	6.6	6.6
Aug	7.4	7.9	6.2	7.6
Sep	6.5	6.4	5.5	6.8
Oct	6.4	7.8	6.1	6.2

Lake 382

Month	77	78	79	80	83	84	85	86
May	4.9	4.7		4.8	3.6	5.2	3.5	4.8
Jun	4.3	4.2	3.8	3.4	4.0	3.8	3.8	4.4
Jul	4.7	2.5	4.4	3.4	4.4	5.0	3.0	4.4
Aug	3.4	4.2	4.0	3.0	3.4	4.6	3.6	4.5
Sep	3.4	4.2	3.6	2.8		3.6	3.9	3.9
Oct		3.4	4.0	3.7	3.6		3.8	4.5

Appendix A. Cont'd

Lake 623				Lake 629			
Month	83	84	85	Month	83	84	85
May			4.7	May		3.4	3.2
Jun	5.0	5.2	4.3	Jun	5.0	4.0	4.7
Jul	4.7	5.9	4.0	Jul	4.2	5.2	5.1
Aug	6.1	6.2	5.0	Jul	4.4	6.4	4.1
Sep	4.7		4.4	Sep	3.8	4.1	3.7
Oct	3.6	4.0	3.7	Oct	4.0	3.8	4.6

APPENDIX B

LAKE 93

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
158	1984	3.6	YELLOW	10	5	10
170	1984	4.1	YELLOW	9	15	20
186	1984	4	YELLOW BROWN	8	10	15
198	1984	2.6	YELLOW BROWN	10	5	10
214	1984	4.4	YELLOW BROWN	2	0	5
226	1984	3.4	YELLOW	3	10	15
242	1984	4.2	YELLOW	6	5	10
254	1984	2.8	YELLOW	10	0	5
270	1984	2.2	YELLOW BROWN	8	25	30
282	1984	2.4	BROWN	10	0	0

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
147	1985	2.5	YELLOW BROWN	2	0	5
163	1985	2.9	BROWN	0	0	5
175	1985	3.1	BROWN	3	0	5
191	1985	2.7	BROWN	4	20	25
203	1985	3.5	YELLOW BROWN	5	0	5
219	1985	3.1	YELLOW	1	15	20
231	1985	3	YELLOW BROWN	10	10	15
248	1985	3	YELLOW	4	0	0
259	1985	2.6	YELLOW BROWN	10	5	10
275	1985	1.6	TURBID YELLOW	9	0	5
287	1985	1.6	TURBID ORANGE	7	15	20

LAKE 103

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
253	1973	2.4	ORANGE	0	24	32
269	1973	1.9	ORANGE	10	0	0
305	1973	2	ORANGE	8	0	3
163	1974	1.9	ORANGE BROWN	9	8	16
191	1974	2.2	ORANGE	6	0	3
219	1974	2.1	YELLOW	0		
247	1974	1.8	YELLOW ORANGE	0		
273	1974	1.75	ORANGE BROWN	0	8	16
149	1975	1.2	ORANGE	5	0	4
177	1975	1	ORANGE	10	8	16
205	1975	1.1	ORANGE	8	3	8
233	1975	1.1	DARK ORANGE	10	0	8
261	1975	1.3	ORANGE	10	3	8
289	1975	1.4	ORANGE	9		

LAKE 109

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
150	1983	4.6	TURQ GREEN	8	10	20
166	1983	3.8	GREEN	7	0	5
178	1983	5	GREEN	0	10	20
193	1983	4.2	YELLOW GREEN	1	15	20
206	1983	4.6	BLUE GREEN	1	5	10
222	1983	5.4	PALE GREEN	8	0	5
234	1983	5.2	YELLOW GREEN	1	15	25
250	1983	4.2	GREEN	10	0	5
292	1983	3.2	PALE YELLOW	10	0	5

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
152	1984	4.8	PALE GREEN	8	0	5
163	1984	6.5	YELLOW	0	15	20
179	1984	4.25	GREEN YELLOW	6	20	25
191	1984	4.7	PALE GREEN	3	0	5
207	1984	4.8	PALE GREEN	9	10	15
219	1984	5	GREEN YELLOW	0	10	15
235	1984	4.4	GREEN	10	10	15
247	1984	5.2	PALE GREEN	10	0	5
263	1984	3.8	PALE BROWN	0	0	5
275	1984	4	PALE GREEN	0	0	5

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
140	1985	3.8	PALE GREEN	7	20	25
156	1985	4.6	PALE	2	0	5
168	1985	3.2	PALE GREEN	7	5	10
185	1985	4.9	GREEN	3	5	10
196	1985	4.5	PALE	9	25	30
212	1985	4.7	PALE GREEN	0	0	0
224	1985	4.9	GREEN	10	10	15
241	1985	4.2	GREEN	1	10	15
252	1985	4.4	PALE GREEN	8	10	15
269	1985	4	YELLOW	1	15	20
280	1985	3.6	PALE GREEN	8	10	15
297	1985	3.4	PALE GREEN	10	20	25

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
132	1986	5.1	PALE GREEN	10	20	25
148	1986	7.8	PALE	0	0	5
160	1986	7	GREEN	9	0	5
176	1986	5.7	PALE GREEN	9	0	0
188	1986	5.4	PALE	4	20	25
204	1986	6.6	GREEN	10	5	10
216	1986	6	PALE	8	10	15
232	1986	5.3	PALE GREEN	1	25	30
244	1986	4.4	GREEN	5	20	25
259	1986	3.8	TURBID GREEN	7	15	20
272	1986	3.8	GREEN	10	0	0
296	1986	4.1	YELLOW GREEN	10	0	5

LAKE 110

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
150	1983	4.25	YELLOW GREEN	9	5	20
166	1983	3.1	GREEN	7	0	0
178	1983	3.8	YELLOW GREEN	0	5	10
193	1983	4	YELLOW	1	10	20
206	1983	3.8	YELLOW GREEN	0	0	5
222	1983	4.6	PALE GREEN	10	0	5
234	1983	5.4	YELLOW	0	15	20
250	1983	4	YELLOW GREEN	10	0	5
262	1983	3	GREEN	9	20	25
292	1983	3.4	PALE YELLOW	10	0	5
105	1984	6.4	YELLOW GREEN	0	0	5
152	1984	3.7	GREEN	8		
163	1984	4.6	GREEN YELLOW	0	15	20
191	1984	3.9	YELLOW	1	10	15
207	1984	3.6	YELLOW	8	10	15
219	1984	3.2	GREEN YELLOW	0	5	10
235	1984	3.6	GREEN	10	10	15
247	1984	5.2	PALE GREEN	10	0	5
263	1984	4.2	PALE BROWN	0	0	5
275	1984	3.2	PALE BROWN	0	5	10
297	1984	2.8	PALE BROWN	10	15	20

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
140	1985	2.3	YELLOW	9	20	25
156	1985	2	YELLOW	0	15	20
168	1985	2.9	PALE GREEN	9	5	10
185	1985	2.9	PALE BROWN	2	5	10
196	1985	2.65	YELLOW	10	0	5
212	1985	3.4	YELLOW	0		
224	1985	2.9	YELLOW GREEN	10	10	15
241	1985	4.75	PALE GREEN	1		
252	1985	3.6	PALE GREEN	9	15	20
269	1985	3.8	YELLOW	2	10	15
280	1985	3.6	GREEN	8	10	15
297	1985	2.4	YELLOW GREEN	10	15	20

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
132	1986	3.8	YELLOW	7	0	0
148	1986	4.4	YELLOW	0	0	5
176	1986	3.8	YELLOW	8	0	5
188	1986	4.2	PALE YELLOW	1	15	20
204	1986	5.8	YELLOW	10	0	5
216	1986	5	YELLOW	9	10	15
232	1986	DATA IS NOT AVAILABLE				
244	1986	5.7	YELLOW GREEN	2	15	20
249	1986	4.4	GREEN	8	0	5
259	1986	4	YELLOW GREEN	7	15	20
272	1986	4.3	GREEN	10	0	0
296	1986	4.1	YELLOW GREEN	10	0	5

LAKE 114

SAMPLING	DATE	SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
191	1969	1.8	GREEN			
217	1969	1.8	YELLOW GREEN			
133	1971	2.6	YELLOW GREEN	0	3	8
161	1971	2	YELLOW GREEN	9		
189	1971	1.3	YELLOW GREEN	0	8	16
217	1971	1.8	YELLOW GREEN	0	3	6
245	1971	1.6	YELLOW GREEN	1		
273	1971	2	YELLOW GREEN	10	3	6
301	1971	3	YELLOW BROWN	7	8	16
136	1974	3	YELLOW BROWN	6		
164	1974	1.6	YELLOW GREEN	0		
192	1974	2	YELLOW GREEN	0	0	3
220	1974	1.9	GREEN	0		
255	1974	2.5	YELLOW GREEN	7	3	8
273	1974	2.75	YELLOW	1	16	32
303	1974	3.5	PALE YELLOW	10		
135	1978	2.8	BROWN GREEN	0		
149	1978	2.7	PALE ORANGE	10		
163	1978	2.8	YELLOW GREEN	4	4	8
177	1978	2.75	GREEN	9		
205	1978	1.8	YELLOW GREEN	3	8	16
219	1978	1.7	YELLOW GREEN	9	0	3
233	1978	1.25	YELLOW GREEN	3	8	11
247	1978	1.4	YELLOW GREEN	9	0	1
261	1978	1.2	YELLOW GREEN	10	3	8
275	1978	1.25	YELLOW GREEN	3		
148	1979	2.2	YELLOW BROWN	0	3	8
176	1979	1.6	YELLOW GREEN	9		
204	1979	1.5	GREEN	10		
260	1979	2.4	PALE GREEN	10	0	3
288	1979	2.8	GREEN	6	0	3
133	1980	4	GREEN	7	7	10
161	1980	2.2	GREEN	9	5	7
189	1980	1.6	YELLOW	0	7	10
217	1980	1.2	GREEN	10	5	7
245	1980	1.9	YELLOW GREEN	10	0	2
273	1980	3.2	YELLOW GREEN	10		
301	1980	3.15	YELLOW	2	0	8
131	1981	2.8	YELLOW	9	5	10
145	1981	3	YELLOW	10	5	10
159	1981	2.4		10	0	5
173	1981	2		1	0	5
187	1981	2		0		
201	1981	1.85	YELLOW GREEN	0	0	5
215	1981	1.3	YELLOW	0	0	5
229	1981	1		4	5	10
243	1981	1.5	YELLOW GREEN	10	0	3
257	1981	1.4	GREEN	1	0	3
271	1981	2	GREEN	9		
285	1981	2.9	YELLOW	10		
299	1981	2.6	YELLOW	9	0	5

LAKE 114

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
137	1982	3.4	ORANGE	10	0	5
151	1982	3	BROWN	10	0	0
165	1982	2.5	ORANGE BROWN	7	0	5
179	1982	2.8	BROWN GREEN	10	0	5
193	1982	1.8	YELLOW	2	0	0
207	1982	2	YELLOW GREEN	0	0	5
221	1982	1.6	YELLOW GREEN	10	0	5
235	1982	1.6	GREEN	0	0	5
249	1982	1.8	YELLOW	1	0	0
263	1982	1.8	YELLOW	9	0	0
277	1982	2	YELLOW	10	0	5
129	1983	3.75	YELLOW	7	10	15
136	1983	3.75	YELLOW	1	0	5
157	1983	3.2	YELLOW GREEN	0	15	20
164	1983	3	PALE YELLOW	9	5	20
171	1983	2.4	PALE BROWN	10	0	3
185	1983	2.2	YELLOW	10	25	35
192	1983	1.8	YELLOW BROWN	3	25	30
220	1983	2.2	YELLOW GREEN	0	15	20
227	1983	2.25	YELLOW	6	0	5
241	1983	2	YELLOW GREEN	10	0	0
248	1983	2.2	YELLOW GREEN	5	5	10
255	1983	1.5	YELLOW	9	10	20
269	1983	2.1	YELLOW	1	0	0
276	1983	2.2	YELLOW	10	0	5
121	1984	3.5		10	5	10
135	1984	3.5	PALE	0	0	5
149	1984	3.6	PALE GREEN	0	5	10
177	1984	1.8	YELLOW	1	10	15
205	1984	1.8	PALE YELLOW	0	10	15
219	1984	2	YELLOW GREEN	2	5	10
233	1984	2.2	PALE YELLOW	8	15	20
247	1984	2.1	PALE	7	0	5
261	1984	2.2	PALE GREEN	1	0	5
289	1984	3.2	GREEN	10	0	5

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
140	1985	2.3	YELLOW			
154	1985	1.7	YELLOW	0	0	5
168	1985	1.9	YELLOW	9	10	15
182	1985	2	YELLOW BROWN	7	0	0
196	1985	2.1	YELLOW BROWN	10	20	25
210	1985	1.9	GREEN YELLOW	5	0	0
224	1985	1.7	YELLOW GREEN	10	0	5
238	1985	1	YELLOW	7	20	25
252	1985	2.2	YELLOW GREEN	10	15	20
266	1985	DATA IS NOT AVAILABLE				
280	1985	2.5	GREEN	8	0	0
296	1985	2.5	YELLOW GREEN	5	15	20

LAKE 114

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
153	1986	2	YELLOW	10	5 10
167	1986	2.2	YELLOW	8	25 30
181	1986	DATA IS NOT AVAILABLE			
195	1986	1.2	YELLOW	10	0 0
209	1986	DATA IS NOT AVAILABLE			
223	1986	DATA IS NOT AVAILABLE			
237	1986	DATA IS NOT AVAILABLE			
251	1986	2.7	GREEN	0	10 15
265	1986	3.3	PALE GREEN	7	15 20
279	1986	4.2	GREEN	10	5 10

LAKE 120

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
135	1969	5	BLUE GREEN	3	
187	1969	6.2		4	0 9
201	1969	6	YELLOW	2	0 8
259	1969	5	GREEN YELLOW		
147	1971	4.3	GREEN	0	1 3
172	1971	4	YELLOW GREEN	0	1 3
200	1971	4	YELLOW GREEN	7	1 3
235	1971	4.1	GREEN	0	3 6
263	1971	4.2	YELLOW GREEN	6	3 6
298	1971	5.5	BROWN	10	3 6
129	1972	4.2	YELLOW GREEN	0	3 8
157	1972	3.8	YELLOW GREEN	10	1 3
178	1972	5.3	YELLOW GREEN	2	3 8
206	1972	4.2	GREEN	10	8 16
241	1972	4.5	YELLOW GREEN	1	
269	1972	4.5	YELLOW GREEN	10	3 8
297	1972	2.6	ORANGE	0	3 8
143	1974	3.8	YELLOW GREEN	10	16 32
171	1974	3.4	YELLOW	7	
199	1974	4.8	GREEN	5	0 3
227	1974	5	YELLOW GREEN	7	8 16
255	1974	4.25	YELLOW BROWN	1	8 16
275	1974	3.5	YELLOW	0	8 16
311	1974	3.5	PALE YELLOW	1	

LAKE 221

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
135	1985	2.1	BROWN	10	10 15
150	1985	1.8	BROWN	10	0 0
163	1985	2.1	YELLOW BROWN	1	5 10
177	1985	1.7	BROWN	10	0 0
191	1985	1.7	BROWN	1	10 15
205	1985	1.5	YELLOW BROWN	10	5 10
219	1985	2.4	BROWN	0	5 10
234	1985	1.8	ORANGE	10	0 0
247	1985	DATA IS NOT AVAILABLE			
263	1985	2	BROWN	10	10 15
275	1985	1.6	PALE BROWN	10	5 10
287	1985	DATA IS NOT AVAILABLE			
135	1986	3.2	BROWN	3	0 5
149	1986	3.2	BROWN	0	0 5
163	1986	2.7	BROWN	6	15 20
177	1986	DATA IS NOT AVAILABLE			
191	1986	2	BROWN	10	0 5
205	1986	2.5		8	
219	1986	2.6	BROWN	10	10 15
233	1986	2.6	BROWN	0	0 0
247	1986	3.3	BROWN	9	0 5
261	1986	2.1	BROWN	9	0 0
274	1986	2.3	BROWN	10	0 0
287	1986	2.1	BROWN	8	0 5

LAKE 222

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
140	1980	3.2	ORANGE GREEN	0	2 5
168	1980	3.8	YELLOW ORANGE	0	2 5
196	1980	3	ORANGE	10	0
224	1980	3.2	DARK ORANGE	0	0
252	1980	2.5	YELLOW	1	0 5
280	1980	2.1	BROWN ORANGE		
165	1981	2.6	ORANGE	5	10 15
194	1981	2.6	YELLOW ORANGE	5	0 5
222	1981	2.4	BROWN ORANGE	4	5 10
250	1981	2.8	ORANGE	10	10 15
278	1981	1.5	ORANGE	10	
144	1982	2.6	ORANGE	1	0 5
172	1982	3	ORANGE BROWN	6	0 5
200	1982	2.6	ORANGE	5	0 5
228	1982	3.2	BROWN	1	0 5
256	1982	2.4	ORANGE	5	0 0
284	1982	1.4	ORANGE	10	15 20

LAKE 222

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
131	1983	1.8	YELLOW BROWN	3	0	5
143	1983	2.4	ORANGE BROWN	8	0	5
171	1983	2.8	ORANGE	10	0	5
199	1983	2.2	BROWN	9	0	5
227	1983	2.8	ORANGE	8	10	15
255	1983	2.2	YELLOW	9	0	0
283	1983	1.4	YELLOW ORANGE	10	5	10
128	1984	2	YELLOW BROWN	10	10	15
142	1984	1.8	ORANGE	10	5	10
156	1984	3.4	BROWN	8		
169	1984	2.8	ORANGE	8	20	25
184	1984	1.6	PALE BROWN	9	10	15
198	1984	2.5	BROWN	8	0	5
212	1984	3.3	BROWN	9	5	10
226	1984	2.6	ORANGE	2	15	20
240	1984	3.6	YELLOW BROWN	0	0	5
254	1984	2.6	PALE BROWN	10	0	5
268	1984	3	BROWN ORANGE	10	5	10

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
135	1985	1.8	ORANGE	10	10	15
150	1985	1.9	BROWN	10	0	0
163	1985	1.7	YELLOW	1	0	5
177	1985	1.7	BROWN	10	0	0
191	1985	1.5	BROWN	4	10	15
205	1985	1.5	PALE BROWN	10	0	5
219	1985	2	BROWN	1	5	10
234	1985	1.8	ORANGE	10	0	0
247	1985	3	ORANGE	10	10	15
263	1985	2.3	BROWN	10	10	15
275	1985	1	PALE ORANGE	2	5	10
135	1986	DATA IS NOT AVAILABLE				
149	1986	2.8	BROWN	0	5	10
163	1986	2.7	ORANGE BROWN	6	15	20
177	1986	DATA IS NOT AVAILABLE				
191	1986	1.6	BROWN	10	0	5
205	1986	DATA IS NOT AVAILABLE				
219	1986	2.3	ORANGE BROWN	10	5	10
233	1986	2.9	DARK BROWN	0	0	0
247	1986	2.2	BROWN	10	0	5
261	1986	2.2	BROWN	10	0	0
274	1986	2.2	BROWN	10	0	0
287	1986	2.1	BROWN	8	5	10

LAKE 223

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
142	1974	4.8	GREEN	3	3	8
170	1974	5	YELLOW GREEN	5	3	8
226	1974	5.6	GREEN	2	3	8
254	1974	6.25	YELLOW	10		
282	1974	3.75	PALE YELLOW	10	8	24
153	1975	5.2	GREEN	4	8	16
237	1975	4.5	DARK GREEN	10	16	24
265	1975	5	GREEN	8		
293	1975	3.75	PALE YELLOW	0	8	16
124	1976	4.6		0		
138	1976	4.8	YELLOW GREEN	0	0	8
152	1976	5.4	GREEN	1		
166	1976	5.8	GREEN	10	8	16
179	1976	7.3	GREEN	6		
222	1976	5.2	GREEN	6		
236	1976	6.25	PALE GREEN	0		
250	1976	5	GREEN	0	8	16
264	1976	5.25	DARK GREEN	10	8	16
278	1976	3.9	GREEN	6	16	19
292	1976	4.1	GREEN	10	3	8
122	1977	4.15	YELLOW GREEN	0	0	8
129	1977	4.5	PALE GREEN	2	16	24
136	1977	4.6	YELLOW GREEN	2	0	8
143	1977	5.2	PALE GREEN	10	16	24
150	1977	6	YELLOW GREEN	0	0	8
157	1977	7.4	YELLOW GREEN	2		
164	1977	7	YELLOW GREEN	10	6	9
171	1977	6.7	YELLOW GREEN	1		
178	1977	7	YELLOW GREEN	2	3	4
185	1977	7	YELLOW GREEN	7		
192	1977	6.2	YELLOW GREEN	10	8	9
199	1977	6.58	YELLOW GREEN	9	8	9
206	1977	6.85	PALE GREEN	0	4	6
213	1977	7.05	YELLOW GREEN	1	3	4
220	1977	6.5	YELLOW GREEN	1	4	6
227	1977	6.83	PALE GREEN	10	6	8
234	1977	7.28	YELLOW GREEN	10	6	8
241	1977	8.75	GREEN	10	3	4
262	1977	6.5	BLUE GREEN	10	16	24
269	1977	6.25	BLUE GREEN	10	0	8
276	1977	5	GREEN	0		
283	1977	4.5	GREEN	4	0	8
290	1977	4.2	BLUE GREEN	10	0	8
297	1977	4	GREEN	1	0	8
128	1978	6	PALE GREEN	10	8	16
142	1978	5.6	YELLOW GREEN	10	0	8
156	1978	6.3	YELLOW GREEN	1	8	16
184	1978	5.8	PALE GREEN	10	4	8
212	1978	7.1	PALE GREEN	2	0	8
226	1978	7.05	PALE GREEN	10	0	8
240	1978	6.5	PALE GREEN	5	0	4
254	1978	5.75	BLUE GREEN	10	11	16
268	1978	5.6	GREEN	10	3	6
296	1978	3.8	PALE YELLOW	2	0	8

LAKE 223

SAMPLING	DATE	SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
141	1979	3.5	GREEN	0	4	8
169	1979	4.6	GREEN	2		
197	1979	7.2	GREEN	2		
225	1979	5.2	GREEN	10		
253	1979	8.4	BLUE GREEN	8	3	8
281	1979	4.8	BLUE GREEN	9	0	3
297	1979	4.4	GREEN	10		
156	1980	5.6	GREEN	10	2	5
182	1980	4.2	GREEN	9	5	7
210	1980	3.6	GREEN	10	12	30
238	1980	4.6	PALE GREEN	10	2	5
266	1980	4	PALE GREEN	10	10	20
294	1980	3.48	YELLOW GREEN			
125	1981	3	YELLOW GREEN	0	0	5
138	1981	6.75	YELLOW GREEN	0	5	10
152	1981	7.6	TURBID GREEN	10	0	5
166	1981	6	YELLOW GREEN	7	15	25
180	1981	6.2	GREEN	9	0	5
194	1981	6	YELLOW GREEN	6	0	5
208	1981	5.6	YELLOW GREEN	4	0	5
222	1981	4.8	GREEN	7	5	10
236	1981	3.8	PALE GREEN	9	0	5
250	1981	2.8	PALE GREEN	8	5	10
264	1981	3.2	PALE YELLOW	1	0	5
278	1981	2.5	YELLOW GREEN	10		
292	1981	3	GREEN	3	15	20
124	1982	4.8	PALE GREEN			
130	1982	6.2	PALE	10	0	5
144	1982	6	PALE GREEN	1	0	5
158	1982	6.2	PALE	10	10	15
172	1982	6.4	PALE	6	0	5
186	1982	6.4	GREEN	10	5	10
200	1982	6.4	GREEN	6	0	5
214	1982	3.4	BLUE GREEN	10	0	5
228	1982	3.6	GREEN	3	0	5
242	1982	3.8	TURBID	8	0	5
270	1982	2.6	GREEN	10	20	25
284	1982	2.6	YELLOW	10	10	15
298	1982	4.2	PALE GREEN	1	0	0
130	1983	4	PALE YELLOW	10	5	10
136	1983	4.4	TURQ GREEN	0	0	5
150	1983	4.6	PALE GREEN	9	15	20
164	1983	6.5	PALE	6	25	30
181	1983	5.2	PALE GREEN	10	10	15
185	1983	4.8	GREEN	10	25	30
192	1983	4.8	GREEN	5	25	35
206	1983	5.6	GREEN	0	0	0
220	1983	4.1	PALE GREEN	1	15	20
234	1983	4.25	GREEN	1	0	5
262	1983	4.2	GREEN	10	5	10
276	1983	6.5	PALE GREEN	10	5	10
290	1983	6.2	YELLOW GREEN	8	0	5

LAKE 223

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
121	1984	4.75	GREEN	10	10	15
135	1984	5.25	PALE GREEN	0	0	5
149	1984	8.6	PALE GREEN	1	0	5
163	1984	7.2	PALE GREEN	0	15	20
170	1984	2.8	ORANGE	8	20	25
177	1984	6.2	GREEN YELLOW	4	15	20
191	1984	7.8	PALE GREEN	3	0	5
205	1984	4.8	PALE GREEN	0	10	15
219	1984	6.5	PALE	1	0	5
233	1984	6.6	PALE	4	15	20
246	1984	3.8	PALE	10	0	5
261	1984	3.3	YELLOW	4	20	25
275	1984	2.4	YELLOW BROWN	0	0	5
289	1984	2.1	GREEN BROWN	10	0	5

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
126	1985	3.8	YELLOW	7	0	5
140	1985	3.1	YELLOW	9	0	0
154	1985	4.2	YELLOW	0	0	0
168	1985	4	GREEN	9	0	5
182	1985	4.1	YELLOW GREEN	5	0	5
196	1985	4.3	GREEN	10	15	20
210	1985	4.8	YELLOW	0	5	10
224	1985	4.2	GREEN	10	15	20
238	1985	4	TURBID GREEN	6	15	20
252	1985	DATA IS NOT AVAILABLE				
266	1985	5	PALE GREEN	10	15	20
280	1985	3.6	GREEN	6	0	0
296	1985	3.5	GREEN	10	15	20
125	1986	DATA IS NOT AVAILABLE				
139	1986	4.8	YELLOW	1	20	25
153	1986	5.7	PALE GREEN	10	15	20
167	1986	6	PALE GREEN	9	15	20
181	1986	5.1	PALE GREEN	9	0	5
195	1986	3.7	TURBID GREEN	10	15	20
209	1986	4.8	GREEN	8	0	5
223	1986	4.3	GREEN	1	0	5
237	1986	4	GREEN	10	20	25
251	1986	4.1	GREEN	2	0	5
265	1986	4.8	PALE GREEN	9	10	15
279	1986	4.2	PALE GREEN	10	5	10
294	1986	5.3	PALE GREEN	0	0	0

LAKE 224

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR		CLOUD COVER N/10	WIND SPEED KMPH	
142	1974	6	GREEN	BLUE	5	3	8
170	1974	6	GREEN		0	8	16
226	1974	6	GREEN		8	3	8
254	1974	6.5	BLUE		10	0	0
282	1974	7	BLUE		10	16	32
181	1975	7.8	BLUE	GREEN	6	3	8
237	1975	7	BLUE	GREEN	10	24	32
265	1975	7	BLUE	GREEN	10	0	3
293	1975	6.25	PALE	GREEN	0	8	16
124	1976	7.3			0		
138	1976	7	BLUE	GREEN	2	0	8
152	1976	7.2	BLUE	GREEN	0		
166	1976	7.9	BLUE	GREEN	10	8	16
180	1976	8.7	BLUE	GREEN	7		
222	1976	7	BLUE	GREEN	5		
236	1976	7.75	BLUE	GREEN	0	8	16
250	1976	7.25	BLUE	GREEN	0	8	16
264	1976	7.5	BLUE	GREEN	9	8	16
278	1976	7.8	BLUE	GREEN	7	8	16
292	1976	6.25	BLUE	GREEN	10	3	8
129	1977	7.75	PALE	GREEN	2	16	24
136	1977	7.5			2	16	32
143	1977	6			10	0	8
150	1977	8.2	PALE	GREEN	1	0	4
157	1977	9.4			3		
164	1977	8.85	PALE	GREEN	10	6	9
171	1977	9.8	PALE	GREEN	1		
178	1977	10	PALE	GREEN	3		
185	1977	9.2	PALE	GREEN	7		
192	1977	9	PALE	GREEN	10	8	9
199	1977	7.5	PALE	GREEN	6	9	11
206	1977	7.8	PALE	GREEN	2	9	11
213	1977	8.6	PALE	GREEN	1	1	3
220	1977	8.25	PALE	GREEN	4	4	6
227	1977	9	PALE	GREEN	10	4	6
234	1977	8.7	PALE	GREEN	7	11	12
241	1977	8.4	PALE	GREEN	5	1	3
262	1977	6.25	BLUE	GREEN	10	0	8
269	1977	7.25	BLUE	GREEN	10	0	8
276	1977	6.8	BLUE	GREEN	0		
283	1977	7.2	BLUE	GREEN	10	8	16
290	1977	6.8	BLUE	GREEN	10	0	16
297	1977	6.2	BLUE	GREEN	1	0	8

LAKE 224

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
135	1978	9	PALE GREEN	0	8	16
163	1978	7.6	PALE GREEN	3	0	8
191	1978	8.8	PALE GREEN	0	0	3
219	1978	8.5	PALE GREEN	8	0	8
247	1978	7.5	PALE GREEN	7	8	16
275	1978	7.6	BLUE GREEN	0	3	8
125	1981	6	GREEN	2	0	5
138	1981	7	GREEN	0	5	10
152	1981	7.6	GREEN	10	5	10
166	1981	6.4	YELLOW GREEN	7	20	25
180	1981	6.2	PALE	4	5	10
194	1981	7.6	PALE		0	5
208	1981	6.4	GREEN	8	5	10
222	1981	8.4	PALE	7	5	1
236	1981	6.8	TURBID GREEN	8	10	15
250	1981	7.8	PALE	6	5	10
264	1981	7.2	PALE	4	5	10
278	1981	7.4	PALE	10	0	3
292	1981	7.2	PALE	5	10	15
124	1982	7	PALE GREEN			
130	1982	7	PALE	9	5	10
144	1982	6	PALE	2	10	15
158	1982	4.8	GREEN BLUE	10	20	30
172	1982	6	PALE	6	0	5
186	1982	6.6	GREEN BLUE	8	0	5
200	1982	7	GREEN	6	0	5
214	1982	6.4	GREEN	10	10	15
228	1982	6	PALE GREEN	3	0	5
256	1982	4.5	PALE	10	0	0
299	1982	5.5	PALE	10	10	15
130	1983	5	TURQ	10	0	5
178	1983	5.8	PALE	0	10	15
206	1983	9.4	PALE	0	0	0
234	1983	7.2	PALE	1	0	5
248	1983	8	BROWN YELLOW	4	10	15
262	1983	6.6	GREEN	10	10	15
276	1983	7	TURQ GREEN	10	0	5
299	1983	7.2	PALE GREEN	0	0	0
135	1984	7	PALE	0	0	5
149	1984	7.1	PALE	3	0	5
163	1984	6.2	PALE GREEN	0	20	25
177	1984	6.6	PALE	9	20	25
191	1984	9.1	PALE	3	5	10
205	1984	9.6	PALE	1	10	15
219	1984	1	PALE	1	0	5
233	1984	7.5	PALE	9	20	25
247	1984	8.2	PALE GREEN	10		
261	1984	7.2	GREEN BLUE	2	5	10
275	1984	7.7	PALE	0	10	15
303	1984	6.4		4	10	15

LAKE 224

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
126	1985	4.8	YELLOW GREEN	10	15 20
141	1985	DATA IS NOT AVAILABLE			
154	1985	5.9	GREEN	1	0 0
170	1985	6.3	PALE GREEN	1	0 5
182	1985	6.3	GREEN	9	5 10
198	1985	7.7	PALE	6	0 0
210	1985	8	GREEN	1	0 0
224	1985	6.2	PALE	10	10 15
238	1985	5.6	PALE GREEN	3	5 10
252	1985	7	PALE GREEN	10	15 20
266	1985	6.4	PALE GREEN	10	15 20
280	1985	5.2	PALE GREEN	3	0 5
302	1985	4.9	PALE GREEN	2	10 15

LAKE 224

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
125	1986	6.1	BLUE	10	20 25
139	1986	6.5	PALE	1	15 20
153	1986	DATA IS NOT AVAILABLE			
167	1986	7.8	BLUE	8	15 20
181	1986	8.2	BLUE	10	0 5
195	1986	7.8	BLUE	10	10 15
209	1986	6.8	PALE	8	10 15
223	1986	8.4	BLUE	2	0 5
237	1986	7.8	BLUE	10	5 10
251	1986	7.1	PALE	0	0 5
265	1986	6.9	PALE	8	15 20
279	1986	6.8	PALE GREEN	10	5 10
302	1986	7	PALE	10	10 15

LAKE 226 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
140	1971	3.4	YELLOW GREEN	8	1	3
203	1971	4	YELLOW GREEN	2	3	6
231	1971	5	YELLOW GREEN	10	3	8
259	1971	3	YELLOW GREEN	10	1	3
287	1971	3.4	YELLOW GREEN	9	8	16
121	1973	4.8	YELLOW	0	16	32
134	1973	3.75	YELLOW GREEN	0		
149	1973	4	YELLOW GREEN	0	3	4
163	1973	4.5	GREEN	5	8	16
177	1973	4	YELLOW GREEN	10		
191	1973	2.2		3	3	8
205	1973	2.6	YELLOW BROWN	10	0	8
219	1973	2.8	YELLOW GREEN	10	0	3
233	1973	2.1	GREEN	4	3	8
247	1973	1.3	GREEN	10	8	16
261	1973	2.2	GREEN	10	3	8
275	1973	2.6	YELLOW GREEN	1	0	1
289	1973	3	YELLOW	5	16	32
303	1973	3	BROWN YELLOW	0	3	8
312	1973	2	YELLOW BROWN	10	8	16
134	1974	3	YELLOW BROWN	10	3	8
148	1974	2.5	YELLOW GREEN	1	3	8
162	1974	2.4	YELLOW GREEN	3	8	16
176	1974	3.1	YELLOW GREEN	0	3	8
190	1974	2.5	GREEN	10	3	8
204	1974	2.2	GREEN	5	3	8
218	1974	1.4	GREEN	1	8	16
229	1974	1.2	GREEN	1		
247	1974	1	GREEN	9	8	16
260	1974	1	YELLOW GREEN	9	3	8
288	1974	1.5	YELLOW	10		
302	1974	1.5	YELLOW	10	3	8
132	1975	3.3	YELLOW GREEN		8	16
146	1975	2.6	YELLOW GREEN	2	16	32
160	1975	1.7	YELLOW GREEN	10	3	8
174	1975	1.5	YELLOW	1	0	8
188	1975	1.6	YELLOW GREEN	4	8	16
202	1975	2	YELLOW GREEN	7	0	3
216	1975	2.3		5	3	8
230	1975	2	GREEN	1	0	8
244	1975	1.75	YELLOW GREEN	2		
258	1975	1	YELLOW GREEN	8	3	8
272	1975	1.3	GREEN	8	0	3
286	1975	2.1	YELLOW GREEN	7	0	8
300	1975	2.4	YELLOW BROWN	2	3	8
314	1975	2.2	PALE YELLOW	10	0	8

LAKE 226 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
131	1976	2.7	YELLOW GREEN	10	8	16
145	1976	2.75	YELLOW GREEN	0	3	8
159	1976	3.9	GREEN	7		
173	1976	2.8	GREEN	6	0	3
187	1976	1.9	GREEN	0	16	24
201	1976	1.75	GREEN	9	8	16
215	1976	2.1	PALE GREEN	0	3	8
229	1976	1.75	PALE GREEN	1	8	16
243	1976	1.75	YELLOW GREEN	8		
257	1976	2.8	YELLOW GREEN	10	8	16
271	1976	3	YELLOW GREEN	3	3	8
285	1976	2.9	YELLOW GREEN	9		
299	1976	2.25	BROWN GREEN	10	8	16
124	1977	3.3	YELLOW BROWN	5	0	8
138	1977	4.4	GREEN YELLOW	1		
152	1977	3	YELLOW BROWN	10	6	11
166	1977	3.1	YELLOW GREEN	10		
180	1977	2.9	PALE GREEN	1	1	3
194	1977	2.4	YELLOW BROWN	6	8	9
208	1977	2.33	YELLOW GREEN	3	3	4
222	1977	1.95	YELLOW GREEN	1	9	12
236	1977	2.5	YELLOW GREEN	0	4	6
264	1977	1.6	BROWN	9		
278	1977	1.6	GREEN	10	16	24
292	1977	1.4	YELLOW GREEN	0	0	8
304	1977	2.2	YELLOW BROWN	10	8	16
130	1978	4	YELLOW GREEN	10	0	8
158	1978	3.3	YELLOW GREEN	3		
172	1978	2.5	YELLOW GREEN	0	8	12
186	1978	1.5	PALE GREEN	10	0	4
200	1978	1.2	TURBID YELLOW	10	4	8
214	1978	1	TURBID GREEN	10	4	6
228	1978	.8	GREEN	10	0	8
242	1978	.8	GREEN	2		
270	1978	1.15	TURBID GREEN	10	0	3
298	1978	3.4	PALE YELLOW	10	8	16
150	1979	3.6	GREEN	10		
178	1979	2.2	GREEN	0		
206	1979	1.9	YELLOW GREEN	8	3	6
234	1979	1.2	YELLOW GREEN	10	3	8
262	1979	1.4	GREEN	9	3	8
290	1979	1.8	PALE GREEN	10		
304	1979	1.8	BROWN	10	10	12
135	1980	3	PALE GREEN	10		
163	1980	1.4	YELLOW	0	2	5
191	1980	.6	DARK GREEN	2	7	10
219	1980	1	DARK GREEN	0	2	5
247	1980	1.3	GREEN YELLOW	8	8	10
275	1980	3	PALE YELLOW	10		
303	1980	2.42	YELLOW BROWN	0	2	5

LAKE 226 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
133	1981	4	YELLOW GREEN	9		
147	1981	4.2	YELLOW GREEN	0	0	5
,61	1981	3.85	GREEN	8	0	5
175	1981	3.4	GREEN	10	0	5
189	1981	3.2	YELLOW	10	5	10
203	1981	4	YELLOW	0	0	5
217	1981	3.2	YELLOW	4	0	5
231	1981	3	BROWN	0	5	10
245	1981	2.9	YELLOW BROWN	0	0	5
259	1981	3	YELLOW GREEN	10	10	15
273	1981	2.8	PALE YELLOW	9	20	25
287	1981	2.9	YELLOW	10	5	10
301	1981	2.7	YELLOW	10		
125	1982	3.2	YELLOW	7	5	10
,39	1982	2.8	GREEN	10	5	10
153	1982	3.2	YELLOW BROWN	0	0	5
167	1982	3.2	YELLOW BROWN	10	0	5
181	1982	3.6	YELLOW GREEN	0	0	5
,95	1982	2.85	BROWN	8	0	5
209	1982	2.8	BROWN	2	0	5
223	1982	3.4	YELLOW BROWN	1	0	0
237	1982	3.2	YELLOW BROWN	10	10	15
251	1982	3.2	YELLOW	8	10	15
265	1982	4	YELLOW	3	5	10
279	1982	2.6	YELLOW	10	15	20
293	1982	2.2	YELLOW	10	10	15
143	1984	3.4	YELLOW BROWN	1	10	15
158	1984	3.4	GREEN YELLOW	10	10	15
171	1984	4.9	GREEN YELLOW	8	0	5
186	1984	3.1	GREEN YELLOW	8	20	25
199	1984	4.1	YELLOW	1	10	15
214	1984	4.8	YELLOW	1	0	5
228	1984	4.5	GREEN YELLOW	9	5	10
242	1984	3.6	YELLOW	2	0	5
255	1984	3.2	PALE GREEN	8	0	5
271	1984	2.6	PALE BROWN	10	10	15
133	1985	2.9	YELLOW BROWN	3	0	5
149	1985	2.9	BROWN	10	0	0
161	1985	2.6	YELLOW	1	0	5
177	1985	3.1	YELLOW BROWN	10	0	0
189	1985	3	YELLOW BROWN	0	0	5
205	1985	3.1	YELLOW	7	15	20
217	1985	3.8	YELLOW BROWN	10	0	5
238	1985	DATA IS NOT AVAILABLE				
245	1985	3.2	BROWN YELLOW	10	0	0
263	1985	3.6	PALE BROWN	10	20	30
273	1985	3	YELLOW BROWN	10	0	10
289	1985	2.3	ORANGE BROWN	10	0	0
303	1985	3	BROWN	1	10	15

LAKE 226 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
127	1986	3.2	YELLOW			
139	1986	3.8	YELLOW	1	5	10
155	1986	3.5	YELLOW BROWN	4	10	15
167	1986	3.5	YELLOW BROWN	8	20	25
183	1986	3.4	BROWN	1	10	15
195	1986	3	YELLOW BROWN	10	0	0
211	1986	3.2	YELLOW GREEN	10	5	10
219	1986	3.5	YELLOW	10	10	15
239	1986	3.3	YELLOW GREEN	9	5	10
251	1986	3.5	YELLOW	1	5	10
267	1986	3.7	YELLOW BROWN	8	0	0
279	1986	3.5	YELLOW BROWN	10	5	10
300	1986	2.9	YELLOW BROWN	10	10	15

LAKE 226 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
121	1973	4.9	YELLOW	1	16	32
134	1973	3.75	GREEN YELLOW	0	8	16
149	1973	4	GREEN	0		
163	1973	5	GREEN	1	3	8
177	1973	5	YELLOW GREEN	10		
191	1973	2.8	GREEN YELLOW	1	3	8
205	1973	2.8	YELLOW BROWN	10		
219	1973	2.8	YELLOW GREEN	10		
233	1973	4	YELLOW	0	3	8
247	1973	3.8	YELLOW GREEN	10	0	8
261	1973	3	GREEN YELLOW	9		
275	1973	3.8	YELLOW GREEN	1	0	1
289	1973	3.25	YELLOW	5	16	32
303	1973	3.75	YELLOW GREEN	0	3	8
134	1974	3.4	YELLOW GREEN	10	3	8
148	1974	3	GREEN YELLOW	10	0	3
162	1974	3.5	YELLOW	8	8	16
176	1974	3.6	YELLOW GREEN	0		
190	1974	3.2	YELLOW GREEN	10	3	8
204	1974	4.2	YELLOW GREEN	5		
218	1974	3.7	PALE GREEN	0	3	8
229	1974	3.8	YELLOW GREEN	1		
246	1974	3.2	YELLOW GREEN	10	8	16
260	1974	3	YELLOW GREEN	9	3	8
288	1974	3	YELLOW	9		
302	1974	2.75	YELLOW	10	0	8

LAKE 226 S

SAMPLING	DATE	SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
132	1975	3.6	YELLOW GREEN	0	8	16
146	1975	3.8	YELLOW GREEN	2	8	16
160	1975	3.6	YELLOW GREEN	10	3	8
174	1975	3.34	PALE YELLOW	1	0	8
188	1975	3.3	YELLOW GREEN	4	0	8
202	1975	2.8	YELLOW GREEN	9	3	8
216	1975	3.2	YELLOW GREEN	4	3	8
230	1975	3.4	YELLOW GREEN	0	0	8
244	1975	3.5	YELLOW	0		
258	1975	2.6	YELLOW GREEN	9	3	8
272	1975	3.1	GREEN	8	0	3
286	1975	3.25	PALE YELLOW	5	0	8
300	1975	2.4	GREEN BROWN	0	0	3
314	1975	3.2	YELLOW	10	0	8
131	1976	2.8	YELLOW GREEN	9	8	16
145	1976	4.4	YELLOW GREEN	0		
159	1976	4.3	GREEN	10	3	8
173	1976	3.9	GREEN	9		
187	1976	3.4	GREEN	0		
201	1976	3.4	GREEN	5	3	8
215	1976	3	GREEN	0		
229	1976	3.9	PALE GREEN	1		
243	1976	3.7	PALE GREEN	8		
257	1976	2.8	YELLOW GREEN	10	8	16
271	1976	2.5	YELLOW GREEN	1	0	3
285	1976	2.9	YELLOW GREEN	9	8	16
299	1976	3.1	YELLOW GREEN	10	8	16
124	1977	3.5	PALE BROWN	10	0	8
138	1977	2.8	YELLOW GREEN	1		
152	1977	3.2	YELLOW GREEN	5	8	16
166	1977	3.1	YELLOW GREEN	10		
180	1977	3.1	TURBID BROWN	1		
194	1977	3	YELLOW BROWN	6	1	3
208	1977	2.8	YELLOW	3	1	3
222	1977	2.8	YELLOW	0	9	12
236	1977	2.45	YELLOW GREEN	0	3	4
264	1977	1.8	GREEN	9		
278	1977	2.4	GREEN	10	8	16
292	1977	2	YELLOW GREEN	0	0	8
304	1977	2.2	YELLOW BROWN	10	8	16
130	1978	4.3	YELLOW GREEN	9	0	8
144	1978	4.2	YELLOW GREEN	0	0	8
158	1978	4.5	YELLOW	5	0	8
172	1978	5.1	YELLOW GREEN	6	0	8
186	1978	3.8	YELLOW GREEN	10	4	8
200	1978	3.4	PALE GREEN	10	0	8
214	1978	2.4	PALE GREEN	6	3	4
228	1978	3.75	YELLOW GREEN	10	0	8
242	1978	2.75	YELLOW GREEN	10		
270	1978	2.55	TURBID GREEN	7	1	4
298	1978	2.4	PALE YELLOW	10		

LAKE 226 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
150	1979	2.7	GREEN	7		
178	1979	4.2	GREEN	1		
206	1979	4	PALE GREEN	10	3	6
234	1979	3.6	GREEN	10	3	8
262	1979	3.9	PALE GREEN	9	3	8
290	1979	3.2	GREEN	0		
304	1979	2.4	GREEN	10	10	12
135	1980	3.2	PALE GREEN	10		
163	1980	2.6	ORANGE GREEN	0		
191	1980	2	BROWN GREEN	4	5	7
219	1980	1.8	YELLOW BROWN	1	2	5
247	1980	1.8	GREEN YELLOW	10	5	10
275	1980	2.75	PALE YELLOW	10		
303	1980	2.81	YELLOW	2	0	5
133	1981	3.6	YELLOW	9		
147	1981	4.6	YELLOW	0	0	5
161	1981	4	GREEN	8	0	5
175	1981	3.5	GREEN	10	0	5
203	1981	3.4	YELLOW	0	0	5
217	1981	3.7	YELLOW	2	0	3
219	1981	3.2	YELLOW	7	5	10
231	1981	3.4	ORANGE BROWN	0	0	5
245	1981	3.2	YELLOW BROWN	0	0	5
259	1981	2.8	YELLOW GREEN	10	10	15
273	1981	3	PALE YELLOW	9	10	15
287	1981	3.1	YELLOW	10	5	10
301	1981	2.8	YELLOW	10	0	3
125	1982	3.3	YELLOW	7	0	5
139	1982	3	GREEN	10	5	10
153	1982	2.4	PALE YELLOW	1	10	15
167	1982	3	YELLOW BROWN	9	0	5
181	1982	3.6	YELLOW GREEN	0	0	5
195	1982	3.2	BROWN	8	0	5
209	1982	3.6	ORANGE	2	0	0
223	1982	4	YELLOW BROWN	1	0	0
237	1982	3.2	YELLOW BROWN	10	0	5
251	1982	3.4	YELLOW	2	10	15
265	1982	3.8	YELLOW	3	5	10
279	1982	2.8	YELLOW	10	5	10
293	1982	2.4	YELLOW	10	10	15
299	1982	2.4	YELLOW	1	0	0
143	1984	3.2	YELLOW BROWN	1	0	5
158	1984	3.2	YELLOW GREEN	10	15	20
171	1984	4	YELLOW GREEN	8	0	5
186	1984	3	YELLOW GREEN	8	10	15
199	1984	3.2	YELLOW BROWN	2	20	25
214	1984	4	YELLOW	1	0	5
228	1984	4.8	GREEN YELLOW	9	5	10
242	1984	4.2	YELLOW	2	0	5
255	1984	4.8	PALE GREEN	8	0	5
271	1984	2.8	PALE GREEN	10	15	20

LAKE 226 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
133	1985	3.2	YELLOW BROWN	5	0 5
149	1985	2.7	YELLOW BROWN	10	0 0
161	1985	3.4	YELLOW BROWN	1	5 10
177	1985	3	YELLOW BROWN	10	0 0
189	1985	3.6	YELLOW	0	0 0
205	1985	2.8	YELLOW	8	15 20
217	1985	3.9	YELLOW	10	0 0
238	1985	3.6	YELLOW BROWN	10	10 15
245	1985	4.2	YELLOW	10	0 0
263	1985	3.2	TURBID BROWN	10	25 35
273	1985	3.2	DARK YELLOW	10	5 10
289	1985	2.8	BROWN	9	0 0
303	1985	3	BROWN	1	5 10
127	1986	3.8	YELLOW		
139	1986	4	YELLOW	1	0 5
155	1986	3.5	YELLOW BROWN	3	20 25
167	1986	3.8	YELLOW BROWN	8	20 25
183	1986	3.4	BROWN	1	10 15
195	1986	3.2	YELLOW BROWN	10	0 5
211	1986	3.3	YELLOW	10	0 5
219	1986	3.8	YELLOW BROWN	10	10 15
239	1986	3.3	YELLOW GREEN	9	5 10
251	1986	3.6	YELLOW	0	5 10
267	1986	3.8	YELLOW	7	0 0
279	1986	3.4	YELLOW BROWN	10	5 10
300	1986	3	YELLOW BROWN	10	0 5

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
166	1968	2.2		7	0 9
187	1968	2.5	YELLOW	3	
313	1968	2.2	YELLOW ORANGE	10	
127	1969	4.4			
137	1969	3.7	YELLOW	1	
176	1969	3	ORANGE BROWN	10	
188	1969	2			
203	1969	1.8	YELLOW ORANGE		
246	1969	1.7	YELLOW ORANGE	10	3 5
251	1969	1.6	YELLOW		
267	1969	1.3	GREEN YELLOW		
302	1969	2.5	YELLOW ORANGE		
316	1969	2.8	ORANGE	10	

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
136	1970	3.2	ORANGE BROWN	3	0	3
138	1970	2.6	BROWN YELLOW	4	8	16
139	1970	2.6	YELLOW	1		
142	1970	3.3	YELLOW	3		
145	1970	3.1	YELLOW	10	8	32
149	1970	3.1	YELLOW	10		
153	1970	2.9	YELLOW	4		
160	1970	2	YELLOW	1	3	4
167	1970	2.2	YELLOW	10	0	1
181	1970	1.3	YELLOW	9	1	3
188	1970	1.35	YELLOW	10	0	1
195	1970	1.2	YELLOW	10		
202	1970	1	YELLOW	0	0	1
209	1970	.95	YELLOW ORANGE	2		
216	1970	.95	YELLOW	5	0	1
223	1970	.7		0		
230	1970	.95	YELLOW	10	0	3
237	1970	.75	GREEN YELLOW	0		
244	1970	.9	YELLOW	10	1	3
251	1970	1.1				
265	1970	1.5	YELLOW			
272	1970	2.2	YELLOW			
279	1970	3.4		10	3	8
286	1970	2.8	YELLOW ORANGE	10	1	3
293	1970	2.3	YELLOW BROWN	0	0	3
300	1970	2.9	YELLOW BROWN	10	8	16
314	1970	2.7	YELLOW	10		
124	1971	3.6	YELLOW BROWN	0		
131	1971	3.4	ORANGE		8	16
145	1971	2.2	YELLOW ORANGE	9	8	16
159	1971	1.4	ORANGE	1		
166	1971	1.1	ORANGE BROWN	1		
173	1971	1	YELLOW	0	1	2
180	1971	1.6	ORANGE BROWN	10		
187	1971	1.1	YELLOW GREEN	2	8	16
194	1971	1.2	YELLOW	0	8	16
201	1971	.9	GREEN	2	1	3
208	1971	3.2	YELLOW ORANGE	3	3	6
215	1971	3.2	YELLOW GREEN	2	1	3
222	1971	1.1	YELLOW GREEN	7	8	16
229	1971	1.1	YELLOW GREEN	10		
236	1971	.9	YELLOW GREEN	10	3	6
243	1971	.8	YELLOW GREEN	2	8	16
250	1971	1.2	GREEN	2	1	3
257	1971	1.6	YELLOW GREEN	7	5	10
264	1971	1.8	YELLOW GREEN	10	3	6
271	1971	2	YELLOW GREEN	10	1	3
278	1971	2.6	YELLOW	10		
285	1971	2.5	YELLOW	2		
292	1971	2.8	ORANGE BROWN	10	32	48
299	1971	3.6	YELLOW	6	1	3

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
130	1972	3.2	YELLOW GREEN	1	3	8
137	1972	2.2	YELLOW GREEN	2	3	8
144	1972	1	GREEN	0	8	16
151	1972	.8	GREEN	0	8	16
165	1972	.8	YELLOW GREEN	10	0	3
172	1972	.7	YELLOW GREEN	0		
179	1972	.5	GREEN	3	1	3
186	1972	.5	GREEN	0		
193	1972	.5	YELLOW GREEN	2		
200	1972	.5	GREEN	9	1	3
207	1972	.4	GREEN	3	3	8
221	1972	.7	GREEN BROWN	7	3	8
235	1972	.5	YELLOW BROWN	0		
249	1972	.8	YELLOW GREEN	1	1	3
256	1972	.9	YELLOW GREEN	10	1	3
263	1972	1.4	YELLOW GREEN	8	1	3
270	1972	1.2	YELLOW GREEN		8	16
291	1972	1.7	YELLOW BROWN	3	10	20
122	1973	2.4	ORANGE	7	24	48
135	1973	2.85	YELLOW BROWN	10	16	32
148	1973	1.1	YELLOW BROWN	0	8	16
162	1973	.75	YELLOW	0	8	16
176	1973	.75	GREEN YELLOW	7	8	16
190	1973	.5	YELLOW GREEN	2	3	8
218	1973	1.2	ORANGE BROWN	10	0	3
232	1973	.9	YELLOW	2	3	8
246	1973	1.6	YELLOW	10	16	24
260	1973	1.6	YELLOW	1	1	3
274	1973	1.75	YELLOW GREEN	10	8	16
288	1973	1.75	YELLOW BROWN	1	16	32
302	1973	1.75	YELLOW BROWN	8	8	16
310	1973	2	YELLOW BROWN	8	8	16

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
141	1974	2.8	YELLOW BROWN	5	0	3
155	1974	1.5	YELLOW GREEN	0	16	32
169	1974	.6	YELLOW GREEN	9		
183	1974	.6	GREEN	10		
197	1974	1.2	YELLOW BROWN	8		
211	1974	1.3	YELLOW GREEN	10		
225	1974	.6	GREEN	3	8	16
239	1974	1.2	YELLOW GREEN	10		
253	1974	1	YELLOW GREEN	10	3	8
267	1974	.9	YELLOW GREEN	2	3	8
281	1974	.75	YELLOW	10		
295	1974	.75	YELLOW	0	3	8
309	1974	1.25	YELLOW	10	3	8
133	1975	2.3		2	8	16
147	1975	1.9	YELLOW GREEN	6	16	19
161	1975	1	YELLOW GREEN	10	3	8
175	1975	1.1	YELLOW GREEN	3		
189	1975	.8	YELLOW GREEN	0	8	24
203	1975	1	YELLOW	2	3	8
217	1975	1	YELLOW GREEN	0	0	3
231	1975	1.5	GREEN	0	0	8
245	1975	2	YELLOW	1		
249	1975	1.5	YELLOW GREEN	0	3	8
273	1975	1.8	YELLOW GREEN	8	3	8
287	1975	2.5	BROWN	10		
301	1975	1.75	YELLOW BROWN	4	3	6
315	1975	2.4	YELLOW BROWN	7	0	8
132	1976	3.1	GREEN YELLOW	5		
146	1976	2.9	GREEN	1	3	8
160	1976	1.6	YELLOW GREEN	2		
174	1976	1.1	YELLOW GREEN	0	8	16
188	1976	1.9	YELLOW GREEN	9		
202	1976	1.8	YELLOW GREEN	0	3	8
216	1976	1.2	GREEN	0	3	8
230	1976	1	YELLOW GREEN	1	8	16
244	1976	1.75	YELLOW GREEN	10		
258	1976	1.7	YELLOW GREEN	9	0	8
286	1976	1.25	YELLOW GREEN	1	0	3

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
123	1977	2.5	PALE BROWN	10	0	8
137	1977	2	YELLOW GREEN	1	0	8
151	1977	2	YELLOW BROWN	10		
165	1977	2	YELLOW BROWN	10	0	8
179	1977	1.5	BROWN YELLOW	10		
193	1977	1.5	YELLOW BROWN	10	0	3
207	1977	1.2	YELLOW GREEN	2		
221	1977	1	YELLOW GREEN	8	4	6
235	1977	1	YELLOW GREEN	2	8	9
263	1977	1.25	YELLOW GREEN	7	0	8
291	1977	1.2	YELLOW BROWN	1	0	8
305	1977	1.5	YELLOW GREEN	10	0	8
143	1978	2.7	YELLOW ORANGE	5	8	16
171	1978	2.8	YELLOW BROWN	10	19	24
185	1978	2.5	ORANGE BROWN	1	0	4
199	1978	1.7	BROWN GREEN	10		
213	1978	1.55	BROWN GREEN	2	4	8
227	1978	1.4	YELLOW GREEN	10	0	8
241	1978	.92	YELLOW GREEN	9	6	8
255	1978	1	YELLOW BROWN	10	27	32
269	1978	1	YELLOW BROWN	10	1	4
297	1978	1	YELLOW GREEN	7	0	8
142	1979	1.25	YELLOW GREEN	10		
170	1979	.8	YELLOW GREEN	10	8	11
198	1979	.9	YELLOW GREEN	3	0	3
226	1979	.5	YELLOW GREEN	9	8	16
254	1979	1	YELLOW GREEN	10	8	11
282	1979	1	GREEN	3		
303	1979	1.2	BROWN YELLOW	10		
127	1980	1.2	YELLOW	10	10	15
157	1980	.8	GREEN BROWN	10	2	5
183	1980	.4	BROWN GREEN	10	0	2
211	1980	.4	DARK GREEN	0		
239	1980	.5	GREEN	2	2	5
267	1980	.4	YELLOW GREEN	6	0	5
295	1980	.47	GREEN			
124	1981	1.41	DARK GREEN	10	5	10
139	1981	1.4		1	0	5
153	1981	1	YELLOW GREEN	10	5	10
167	1981	1.1	YELLOW BROWN	5	10	15
181	1981	1	GREEN	2	0	5
195	1981	1.2		3	0	5
209	1981	.62	ORANGE YELLOW	0	0	5
223	1981	.6	GREEN	0	0	5
237	1981	.9	YELLOW BROWN	8	0	3
251	1981	.7	BROWN	0	5	10
271	1981	.6	BROWN	1	5	10
279	1981	.8	BROWN YELLOW	7	15	20
293	1981	1	YELLOW BROWN	10	20	25

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
131	1982	1.8	BROWN	10	0	5
145	1982	.8	BROWN	7	0	5
159	1982	1.2	BROWN	10	0	5
173	1982	1.6	BROWN	3	0	5
187	1982	1	BROWN	8	0	5
201	1982	0	GREEN	0	0	5
215	1982	.3	BROWN	10	0	0
229	1982	.3	BROWN GREEN	1	0	5
243	1982	.28	BROWN	10	0	0
271	1982	1	YELLOW GREEN	10	5	10
285	1982	1	YELLOW BROWN	10	0	0
299	1982	.8	YELLOW	5	5	10
137	1983	2	YELLOW BROWN	5	5	10
144	1983	1.4	TURQ YELLOW	10	15	20
158	1983	1.2	YELLOW BROWN	0	5	10
172	1983	1	PALE YELLOW	7	0	5
186	1983	.8	YELLOW BROWN	2	0	5
200	1983	.6	YELLOW BROWN	7	0	0
214	1983	1.2	YELLOW	7	15	20
228	1983	1.6	YELLOW BROWN	10	0	5
242	1983	1.8	YELLOW BROWN	6	0	0
256	1983	1	YELLOW GREEN	9	5	10
270	1983	1.4	YELLOW	1	0	5
284	1983	1.8	BROWN	10	5	10
299	1983	1.2	BROWN	0	0	0
129	1984	1.4	YELLOW BROWN	10	20	25
143	1984	1.2	TURBID YELLOW	0	5	10
157	1984	1.8	YELLOW BROWN	10	0	0
171	1984	1.6	YELLOW BROWN	6	0	0
185	1984	1.6	YELLOW BROWN	0	5	10
199	1984	1	BROWN	3	20	25
213	1984	1.2	YELLOW	10	0	5
227	1984	.6	BROWN	7	10	15
241	1984	.6	YELLOW BROWN	4	0	5
255	1984	.6	TURBID YELLOW	4	0	5
269	1984	.6	YELLOW	10	5	10
283	1984	.6	GREEN	0	0	0

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
134	1985	1.6	BROWN	10	0 0
148	1985	1.2	YELLOW BROWN	1	0 5
162	1985	1.5	BROWN	7	0 0
176	1985	.9	YELLOW BROWN	10	0 5
190	1985	.5	GREEN YELLOW	5	15 20
205	1985	.5	YELLOW	4	0 5
218	1985	.8	YELLOW	4	0 5
232	1985	.8	YELLOW BROWN	9	0 0
246	1985	.8	YELLOW	10	10 15
260	1985	1.2	TURBID GREEN	9	15 20
274	1985	1.1	BROWN	10	0 0
281	1985	DATA IS NOT AVAILABLE			
294	1985	1.4	ORANGE YELLOW	1	0 8

LAKE 227

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
126	1986	1.4	BROWN	10	0 0
140	1986	.8	BROWN	0	0 5
154	1986	1.6	BROWN YELLOW	8	10 15
168	1986	1.1	BROWN	0	0 0
182	1986	1.1	DARK YELLOW	10	0 5
196	1986	1	TURBID	1	0 5
210	1986	1	BROWN	10	0 0
224	1986	1.2	TURBID	1	10 15
238	1986	1.2	YELLOW BROWN	5	15 20
252	1986	1.1	YELLOW	2	0 0
266	1986	1.1	BROWN	5	0 0
280	1986	1.1	TURBID YELLOW	10	0 0
301	1986	1.2	PALE	10	15 20

LAKE 230

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
171	1969	2.4				
201	1969	5.4	YELLOW			
259	1969	3.1	YELLOW BROWN			
288	1969	4.2	YELLOW ORANGE			
244	1970	3.9	YELLOW			
172	1971	4.1	YELLOW			
200	1971	4.3	YELLOW			
235	1971	5.5	GREEN YELLOW	0	3	8
263	1971	5				
293	1971	4.6	YELLOW ORANGE	1	8	16
129	1972	3.6	ORANGE BROWN	0		
157	1972	4.3	ORANGE	10	3	8
206	1972	3	YELLOW ORANGE	10	8	16
241	1972	4.2	YELLOW	0	0	3
269	1972	3.3	YELLOW ORANGE	10	3	8
297	1972	2.2		0	8	16
154	1975	4	ORANGE	5	8	16
182	1975	4	YELLOW ORANGE	1		
211	1975	3.9	YELLOW	0	3	8
238	1975	2.8	YELLOW ORANGE	10	0	8
266	1975	2.75	ORANGE		3	8
294	1975	3.25	YELLOW	0	8	16
309	1975	2.5	BROWN	8		
125	1976	1.9	YELLOW BROWN	7		
153	1976	3.9	YELLOW ORANGE	2	3	8
181	1976	2.8	YELLOW BROWN	1		
240	1976	3.25	ORANGE GREEN	10		
265	1976	3.75	ORANGE GREEN	7	8	16
293	1976	3.8	YELLOW BROWN	10	0	3

LAKE 239

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
127	1969	3		10		
135	1969	3.5	YELLOW	9	0	18
175	1969	3.7				
189	1969	3	BROWN			
237	1969	4	ORANGE			
245	1969	4.1	YELLOW BROWN	10	5	7
281	1969	3.1	YELLOW BROWN	10		
296	1969	7	YELLOW ORANGE	10	3	4
307	1969	4	YELLOW BROWN	10		
320	1969	4.5	YELLOW	10	14	18
136	1970	4.3	ORANGE BROWN	7	8	16
139	1970	3.9	YELLOW BROWN	1	4	8
141	1970	3.8	YELLOW	10	3	4
148	1970	3.2	YELLOW BROWN	2	0	3
154	1970	3.7	YELLOW BROWN	1	3	8
169	1970	3.68	YELLOW	10	8	16
182	1970	4.2	YELLOW -	4	3	8
189	1970	3.1	YELLOW BROWN	4	0	1
196	1970	4	YELLOW BROWN	2	3	6
210	1970	4.3	YELLOW	10	0	1
236	1970	4	YELLOW	1	0	3
252	1970	4.8	YELLOW ORANGE			
266	1970	2.8	YELLOW BROWN			
280	1970	4.2	YELLOW ORANGE	10	3	8
294	1970	4	YELLOW	0	0	3
313	1970	3.75	YELLOW	10		
120	1971	5.2				
122	1971	4.8		0	8	16
123	1971	4.6	YELLOW ORANGE	2	8	16
126	1971	4.9		0	3	6
130	1971	3.8	ORANGE BROWN	6	1	3
144	1971	2.5	ORANGE BROWN	10	10	20
158	1971	3.6	ORANGE BROWN	7	16	24
168	1971	3.8	ORANGE BROWN	8	3	6
186	1971	3.7	BROWN ORANGE	1	8	16
196	1971	3.3	BROWN ORANGE	8	6	9
214	1971	4	ORANGE	6	8	16
224	1971	2.6	ORANGE BROWN	1	8	16
242	1971	3.1	ORANGE	0	2	4
256	1971	3.1	ORANGE	1	8	16
277	1971	3.8		10	8	16
291	1971	3.8	YELLOW ORANGE	10		
314	1971	3.8	BROWN	10	3	8

LAKE 239

SAMPLING	DATE	SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
129	1973	3.4	YELLOW GREEN	9	3	8
131	1973	3.5		0		
143	1973	3.75	YELLOW BROWN	6	0	3
157	1973	2.5	YELLOW	5	3	8
171	1973	3.4	YELLOW ORANGE	10	3	8
185	1973	4.4	BROWN	10	16	32
199	1973	4.5	YELLOW BROWN	10	3	8
213	1973	4.4	YELLOW	6	0	3
227	1973	4	YELLOW BROWN	10	6	9
241	1973	4.9	YELLOW ORANGE	2	8	16
255	1973	4.4	YELLOW BROWN	1		
269	1973	4.6	BROWN	10		
283	1973	3.6	YELLOW BROWN	10	0	3
297	1973	4.25	YELLOW BROWN	10	16	32
150	1974	3	YELLOW BROWN	8	0	3
179	1974	2.4	YELLOW	4	16	24
206	1974	3	YELLOW BROWN	7	3	8
234	1974	3.6	YELLOW BROWN	7		
262	1974	3.6	YELLOW BROWN	1	8	16
290	1974	3.5	YELLOW BROWN	10	8	16
139	1975	3.6	ORANGE BROWN	3	8	16
167	1975	4	ORANGE	0	8	16
195	1975	3.7	YELLOW ORANGE	8		
223	1975	2.8	YELLOW ORANGE	10	0	3
251	1975	3.5	ORANGE	0		
279	1975	3.25	PALE YELLOW	3	0	8
307	1975	3.5	YELLOW GREEN	1	8	16
139	1976	3.4		-1		
167	1976	3.4	YELLOW BROWN	10	16	24
195	1976	4.25	ORANGE GREEN	8	16	24
223	1976	3.7	BROWN GREEN	10	3	8
251	1976	3.6	BROWN GREEN	5	8	16
279	1976	3.5	BROWN GREEN	10		
137	1977	2.9		7	0	4
165	1977	3.15	YELLOW BROWN	10		
193	1977	3.9	YELLOW	10	4	6
221	1977	4.55	YELLOW ORANGE	5	11	12
249	1977	3.8	YELLOW ORANGE	7	8	16
277	1977	3.4	ORANGE BROWN	9	0	8
143	1978	2.5	BROWN GREEN	2	8	11
171	1978	3.6	YELLOW BROWN	10	8	16
199	1978	4.9	YELLOW BROWN	7	11	16
227	1978	4	ORANGE BROWN	10	8	16
255	1978	3.4	YELLOW GREEN	5	24	32
283	1978	3.6	YELLOW GREEN	0		

LAKE 239

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
136	1979	3.4	YELLOW BROWN	9		
164	1979	3	GREEN	10		
192	1979	4.2	GREEN	2		
220	1979	4.8	BROWN	0		
248	1979	3.9	PALE BROWN	8	3	8
276	1979	3.6	PALE BROWN	10		
302	1979	4	DARK BROWN	10	3	8
126	1980	5.4	GREEN	0	2	5
161	1980	3.8	ORANGE BROWN	2	5	7
184	1980	2.6	ORANGE BROWN	0	2	5
205	1980	3	YELLOW BROWN	0	5	7
233	1980	3.2	YELLOW	10	2	5
261	1980	3.75	PALE YELLOW	10	0	-1
289	1980	3.5	PALE YELLOW	2.5	0	-1
133	1981	3.41	YELLOW GREEN	9	0	2
147	1981	4	YELLOW GREEN	3	0	5
161	1981	4.1	YELLOW GREEN	6	5	10
175	1981	4	YELLOW GREEN	10	0	5
189	1981	3.2	YELLOW BROWN	2	5	10
203	1981	4		1	5	10
217	1981	3.6	YELLOW	2	5	10
231	1981	3.6	YELLOW	0	10	15
245	1981	3.4	GREEN	0	5	10
259	1981	3.2	YELLOW BROWN	10	10	15
272	1981	3	YELLOW BROWN	10	5	10
301	1981	3.2	YELLOW BROWN	10	15	20
139	1982	3.2	YELLOW	10	10	15
153	1982	3.7	YELLOW	1	10	15
167	1982	3.2	YELLOW	10	0	5
181	1982	4	YELLOW	1	5	10
195	1982	4	YELLOW ORANGE	6	0	5
209	1982	4.2	YELLOW	1	0	0
223	1982	4.8	ORANGE BROWN	0	0	0
237	1982	3.8	YELLOW	8	0	5
251	1982	3.6	YELLOW	10	15	20
265	1982	4	YELLOW BROWN	1	10	15
279	1982	3.2	YELLOW BROWN	10	20	25
293	1982	3.2	YELLOW BROWN	4	20	25
130	1983	3.3	PALE YELLOW	10	10	15
138	1983	2.4	PALE YELLOW	9	0	5
144	1983	2.75	YELLOW GREEN	10	20	25
172	1983	3.8	YELLOW BROWN	10	0	5
200	1983	5.4	YELLOW GREEN	5	10	15
256	1983	3.4	YELLOW	3	10	15
284	1983	3.2	YELLOW	10	5	10

LAKE 239

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KM.PH	
129	1984	4.8	PALE YELLOW	10	15	20
157	1984	3.4	YELLOW BROWN	10	0	5
171	1984	4.9	YELLOW BROWN	3	0	5
185	1984	4.4	YELLOW	0	10	15
199	1984	5.4	YELLOW	7	15	20
213	1984	4.8	YELLOW BROWN	10	0	5
227	1984	6.5	PALE YELLOW	8	20	25
241	1984	6	GREEN YELLOW	5		
255	1984	4.8	PALE GREEN	10	5	10
269	1984	4.2	GREEN	1	20	25
303	1984	4.2	PALE BROWN	3	10	15
134	1985	3.1	BROWN	10	0	0
155	1985	3.2	YELLOW	9	5	10
162	1985	3.2	YELLOW BROWN	8	5	10
178	1985	3	YELLOW BROWN	10	20	25
190	1985	2.8	YELLOW	7	0	10
207	1985	4	YELLOW BROWN	6	0	5
218	1985	3.4	YELLOW	9	10	15
246	1985	3.5	YELLOW BROWN	10	5	10
262	1985	4	YELLOW	10	15	20
274	1985	4	YELLOW BROWN	10	10	15
290	1985	DATA IS NOT AVAILABLE				
303	1985	3.8	YELLOW	4	10	15
140	1986	3.9	BROWN	0	0	5
155	1986	4.6	DARK YELLOW	4	15	20
168	1986	4.1	YELLOW BROWN	3	0	5
183	1986	5	YELLOW BROWN	1	5	10
196	1986	5.2	YELLOW	1	0	5
211	1986	4.5	YELLOW	9	15	20
224	1986	5.2	YELLOW	5	20	25
239	1986	DATA IS NOT AVAILABLE				
252	1986	4.2	GREEN	4	0	0
267	1986	5.1	YELLOW BROWN	4	0	5
280	1986	4.1	YELLOW	10	0	0
303	1986	4.6	PALE YELLOW	3	15	20

LAKE 240

SAMPLING	DATE	SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
15	1969	4.2	YELLOW BROWN	10		
127	1969	3.2		9	27	36
135	1969	3.7		10		
175	1969	4.7				
189	1969	3.5				
237	1969	3.75	YELLOW ORANGE			
245	1969	3.6	YELLOW ORANGE	10	4	6
265	1969	3.8	GREEN YELLOW	10	7	9
281	1969	3.6	YELLOW BROWN	10		
294	1969	3.5	BROWN ORANGE	10	4	11
309	1969	3.9	YELLOW ORANGE	10		
134	1970	3.2	YELLOW BROWN	10	0	8
136	1970	3.5	YELLOW	9	8	12
139	1970	3	YELLOW	4	6	9
154	1970	3.1	YELLOW	1	6	9
169	1970	2.3		10	8	16
189	1970	3.9	YELLOW	3	0	8
196	1970	4.2	YELLOW	1	3	8
203	1970	3.4	YELLOW	9	3	4
210	1970	4.6	YELLOW	10	0	1
217	1970	4.1	YELLOW	0	0	1
224	1970	4.9	YELLOW	1	1	3
231	1970	3	YELLOW	1	0	1
238	1970	4.8	YELLOW	4	0	1
252	1970	3.2	YELLOW	10	0	1
259	1970	3.2	YELLOW GREEN	4	1	3
266	1970	3.4	YELLOW GREEN			
280	1970	3.6	YELLOW ORANGE	10	1	3
294	1970	4.2	YELLOW BROWN	1	0	1
313	1970	3.5	YELLOW	10		

LAKE 240

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
120	1971	3.8		0		
121	1971	4.8		7	16	24
123	1971	4.1	YELLOW ORANGE	4	8	16
144	1971	3.1	ORANGE BROWN	10	10	15
158	1971	5	YELLOW ORANGE	3	8	16
168	1971	4.2	YELLOW GREEN	10	5	10
186	1971	4	YELLOW	1	5	10
196	1971	3.2	BROWN ORANGE	3	3	6
214	1971	3.4	YELLOW GREEN	10	8	16
224	1971	3.4	YELLOW ORANGE	2	8	16
242	1971	3.8	YELLOW GREEN	0	3	6
256	1971	3.4	YELLOW GREEN	1	8	16
277	1971	2.6	YELLOW	0	24	32
291	1971	2.6	YELLOW	10	3	6
314	1971	3.4	YELLOW GREEN	10	3	8
136	1972	3	YELLOW GREEN	1	16	32
164	1972	4.4	YELLOW	10	3	8
192	1972	3.7	YELLOW GREEN	8	8	16
227	1972	4.4	YELLOW GREEN	10	8	16
255	1972	4.2	YELLOW GREEN	0	8	16
285	1972	3.2	YELLOW BROWN	9	16	32
180	1974	3.4		10		
139	1975	3.6	YELLOW GREEN	3	8	16
167	1975	3.8	YELLOW GREEN	7	8	16
195	1975	3.8	YELLOW GREEN	4	0	8
223	1975	3.3	YELLOW GREEN	10		
251	1975	3.5	ORANGE	1		
279	1975	4	PALE YELLOW	1	0	8
307	1975	3.1	YELLOW GREEN	2	16	24
139	1976	3.8		0		
167	1976	4.1	YELLOW GREEN	10		
195	1976	4.25	GREEN	0		
223	1976	4	GREEN	10	0	3
251	1976	3.75	GREEN	1	8	16
279	1976	3.1	BROWN GREEN	10		

LAKE 240

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
137	1977	3.55		9.5	4	8
165	1977	3.7	YELLOW GREEN	10		
193	1977	3.9	DARK YELLOW	10	6	8
221	1977	4.03	YELLOW GREEN	8	8	11
249	1977	3.9	YELLOW ORANGE	9		
277	1977	3.25	GREEN	10		
143	1978	3.6	PALE GREEN	9	0	8
171	1978	4.1	DARK YELLOW	10	11	19
199	1978	4	YELLOW GREEN	7	12	19
227	1978	3.8	BROWN GREEN	10	8	11
255	1978	3.6	GREEN	5	24	40
283	1978	3.4	YELLOW BROWN	0		
139	1981	4.6	YELLOW GREEN	0	5	10
153	1981	4.4	YELLOW GREEN	10	5	10
167	1981	4.4	YELLOW	0	5	10
195	1981	4	YELLOW	6	0	5
209	1981	4.6	YELLOW	1	0	5
223	1981	4	GREEN BROWN	4	5	10
237	1981	4.6	YELLOW	3	0	5
251	1981	3.6	YELLOW GREEN	0	0	2
265	1981	3	YELLOW BROWN	6	10	15
279	1981	2.8	YELLOW	5	20	25
293	1981	2.6	YELLOW BROWN	10	0	5
133	1982	3.6	YELLOW	10	0	5
146	1982	4	YELLOW GREEN	4	0	5
160	1982	4	YELLOW GREEN	10	10	15
174	1982	4.8	YELLOW GREEN	8	5	10
188	1982	3	YELLOW	9	20	25
203	1982	4	BROWN YELLOW	1	0	5
216	1982	3.2	TURBID GREEN	1	0	5
230	1982	4.1	YELLOW GREEN	10	0	5
244	1982	4.2	YELLOW GREEN	10	0	5
258	1982	3.4	YELLOW BROWN	4	10	15
272	1982	3	YELLOW	5	15	20
286	1982	2.8	TURBID YELLOW	10	15	20
138	1983	2.4	YELLOW BROWN	9	10	15
153	1983	3.6	YELLOW GREEN	8	0	0
167	1983	3.6	YELLOW	7	15	20
195	1983	5.2	GREEN	1	0	5
209	1983	4.6	YELLOW GREEN	10	0	5
223	1983	5.6	YELLOW	4	5	10
237	1983	4.8	GREEN	0	15	25
251	1983	4	YELLOW GREEN	7	0	5
278	1983	3	PALE YELLOW	10	0	5
299	1983	3.6	PALE GREEN	3	5	10

LAKE 240

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
130	1984	3	YELLOW BROWN	10	10	15
145	1984	3.6	GREEN YELLOW	5	5	10
158	1984	5.2	GREEN	10	5	10
173	1984	5	GREEN	10	5	10
186	1984	4.1	YELLOW	1	20	25
201	1984	6.1	GREEN YELLOW	1	5	10
214	1984	4.4	YELLOW	1	0	5
229	1984	5.6	PALE GREEN	8	5	10
242	1984	4.8	GREEN YELLOW	2	5	10
256	1984	3.8	PALE GREEN	10	10	15
270	1984	3.4	PALE GREEN	7	5	10
128	1985	3	YELLOW BROWN	2	5	10
143	1985	3.5	YELLOW	1	0	5
156	1985	3.8	PALE YELLOW	1	0	5
170	1985	3.5	YELLOW BROWN	2	0	5
184	1985	3.4	YELLOW BROWN	6	0	5
198	1985	4.1	YELLOW	1	0	0
212	1985	3.8	YELLOW	0	0	5
226	1985	3.2	YELLOW BROWN	10	30	35
240	1985	DATA IS NOT AVAILABLE				
254	1985	3.8	PALE GREEN	0	0	5
268	1985	3.2	DARK YELLOW	5	15	20
296	1985	2.8	YELLOW	7	10	15
127	1986	DATA IS NOT AVAILABLE				
141	1986	4.6	YELLOW	0	0	5
155	1986	5.8	YELLOW	5	10	15
169	1986	4	YELLOW	2	0	5
183	1986	4.4	YELLOW	1	5	10
197	1986	4.1	YELLOW GREEN	9	5	10
211	1986	4.5	YELLOW	9	10	15
225	1986	4.8	YELLOW	10	15	20
239	1986	3.8	YELLOW	8	10	15
253	1986	4	YELLOW GREEN	9	0	0
267	1986	5.2	YELLOW GREEN	4	0	5
281	1986	3.7	YELLOW	8	20	30
287	1986	4	YELLOW	5	0	5

LAKE 260

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
134	1986	5	YELLOW	5	0	0
146	1986	5.2	YELLOW	1	0	5
162	1986	4.1	GREEN	9	10	15
174	1986	5	YELLOW	10	20	25
189	1986	4.8	YELLOW	3	0	5
202	1986	5.2	YELLOW	7	5	10
217	1986	DATA IS NOT AVAILABLE				
230	1986	5	YELLOW GREEN	0	5	10
246	1986	4.1	GREEN	10	10	15
258	1986	4.1	GREEN YELLOW	10	20	25
273	1986	4.3	YELLOW GREEN	2	10	15
281	1986	3.6	TURBID GREEN	8	15	20
300	1986	4.4	TURBID YELLOW	10	5	10

LAKE 261

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
244	1970	3.6	YELLOW ORANGE			
147	1971	3.2	YELLOW ORANGE	0	1	2
172	1971	2.4	YELLOW ORANGE	1	1	3
200	1971	3.3	YELLOW BROWN	10	0	8
235	1971	3.8	YELLOW	0		
263	1971	3.4	YELLOW	8	2	5
294	1971	3.4	YELLOW BROWN	0	1	3
129	1972	2.6	YELLOW ORANGE	0	8	16
178	1972	3.8	YELLOW			
206	1972	2.7	YELLOW ORANGE	10	8	16
241	1972	2.4	YELLOW ORANGE	0	8	16
269	1972	2.4	ORANGE	10		
297	1972	2.3		0	8	16
128	1973	3.1	YELLOW BROWN	9	8	16
142	1973	2.8	YELLOW ORANGE	9	8	16
156	1973	2.7	YELLOW BROWN	8	8	16
170	1973	3.5	YELLOW	10	8	16
184	1973	2.6	YELLOW ORANGE	2	8	16
198	1973	2.8	YELLOW BROWN	1	3	8
212	1973	2.3	YELLOW BROWN	2	0	3
219	1973	2.2	ORANGE BROWN	10	0	3
226	1973	2.2	YELLOW BROWN	0	8	16
240	1973	2.4	YELLOW BROWN	2	16	24
254	1973	1.4	YELLOW BROWN	6	3	8
261	1973	1.8	YELLOW BROWN	10		
268	1973	1.8	ORANGE BROWN	8	3	8
282	1973	3	YELLOW BROWN	10	8	16
296	1973	3.2	YELLOW BROWN	0	8	16

LAKE 261

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
149	1974	2.5	YELLOW BROWN	2	3	8
177	1974	2.6	ORANGE	0	3	8
205	1974	2.6	YELLOW BROWN	10	3	8
228	1974	3	YELLOW BROWN	2	0	3
248	1974	3.5	BROWN	0		
261	1974	2.6	YELLOW BROWN	10	3	8
274	1974	2	YELLOW BROWN	1	3	6
289	1974	2.4	YELLOW	10	3	8
304	1974	2.5	YELLOW BROWN	10	0	3
142	1975	2.4	ORANGE	7	3	8
156	1975	3.2	YELLOW ORANGE	10		
170	1975	3.9	ORANGE	8		
184	1975	2.7	ORANGE	3	0	3
198	1975	2	ORANGE	4	3	8
212	1975	2.4	ORANGE	0	8	16
226	1975	2.8	ORANGE	10	0	3
240	1975	3.2	DARK ORANGE	3	0	8
254	1975	2.5	YELLOW BROWN	8	8	16
268	1975	2.8	ORANGE	0	3	8
282	1975	3	PALE YELLOW	10	8	11
296	1975	2.2	PALE BROWN	10	0	3
310	1975	2.5	YELLOW ORANGE	3	0	8
128	1976	2.3	BROWN YELLOW	6	0	3
141	1976	3.25	BROWN YELLOW	1		
147	1976	4.2	ORANGE	1	24	40
155	1976	3.7	ORANGE BROWN	2		
162	1976	3.9	ORANGE	4	8	16
169	1976	3.5	ORANGE BROWN	10		
176	1976	2.2	YELLOW BROWN	1	8	16
183	1976	3.6	ORANGE	0	0	3
190	1976	3.5	ORANGE	5	3	8
197	1976	4	GREEN BROWN	4	3	24
204	1976	2.8	GREEN ORANGE	10	8	16
211	1976	2.2	PALE GREEN	10		
218	1976	2.1	YELLOW GREEN	1	8	24
225	1976	2.6	ORANGE	10	3	8
232	1976	3.3	YELLOW	1	8	32
239	1976	3.5	YELLOW	8	3	8
253	1976	2.9	ORANGE BROWN	3	8	16
267	1976	2.5	ORANGE BROWN	10	0	3
281	1976	2.1	ORANGE BROWN	3	0	3
295	1976	2.1	ORANGE GREEN	9	8	16
131	1977	2.9	YELLOW	9		
159	1977	2.9	ORANGE BROWN	10	0	8
187	1977	2.7	YELLOW BROWN	10		
215	1977	3.25	YELLOW BROWN	2	1	3
243	1977	3.8	YELLOW BROWN	10	1	3
271	1977	2.25	ORANGE BROWN	0	0	8
137	1978	2.9	ORANGE	0	0	8
165	1978	2.4	YELLOW BROWN	9	16	24
193	1978	2.6	BROWN	10	11	16
221	1978	3.15	ORANGE BROWN	1	0	3
249	1978	4.3	YELLOW BROWN	0	1	3
277	1978	3.2	YELLOW ORANGE	0		

LAKE 302 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
125	1972	4	YELLOW GREEN	0	3	8
139	1972	4.2	YELLOW GREEN	6	3	8
153	1972	4.6	YELLOW GREEN	2		
167	1972	3.4	YELLOW GREEN	8	16	32
181	1972	3.7	GREEN	2	0	1
195	1972	3.7	YELLOW GREEN	6	3	8
209	1972	4.6	YELLOW GREEN	0		
223	1972	3.5	GREEN	9	16	32
237	1972	4	YELLOW GREEN	5	3	8
258	1972	3.3	YELLOW GREEN	1	16	32
265	1972	3.1	YELLOW GREEN	7	32	64
286	1972	2.9	YELLOW BROWN	4	3	8
293	1972	2.4	YELLOW BROWN	5	16	32
127	1973	4.1	BROWN GREEN	1	3	8
141	1973	3	GREEN	1	3	8
155	1973	3	GREEN	1	16	32
169	1973	4.6	GREEN YELLOW	10	3	8
183	1973	3.5	GREEN YELLOW	0	16	32
197	1973	3.5	GREEN YELLOW	7	8	16
211	1973	3.4	GREEN	10	8	16
225	1973	3.5	GREEN	2	8	16
239	1973	4.9	YELLOW GREEN	0	8	11
253	1973	3.2	GREEN	0	3	8
281	1973	3	YELLOW GREEN	10	3	8
295	1973	2.75	PALE YELLOW	1	0	3
309	1973	2.5	PALE YELLOW	10	16	24
156	1974	3.4	GREEN	10	3	8
184	1974	2.8	YELLOW GREEN	10		
212	1974	3.2	GREEN	7	3	8
238	1974	3	YELLOW GREEN	9		
268	1974	3.1	YELLOW GREEN	7	3	8
296	1974	2.75	YELLOW	0	0	3
308	1974	2.25	PALE YELLOW	10	0	8

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
134	1975	2.3	GREEN	10	16	32
148	1975	4	YELLOW GREEN	.5	0	4
162	1975	4	GREEN	5	3	8
176	1975	3	YELLOW GREEN	0	8	16
190	1975	3.1	YELLOW GREEN	3	0	3
204	1975	3.6	GREEN	8	3	8
218	1975	4	YELLOW GREEN	0	3	8
232	1975	3.5	YELLOW GREEN	0	0	8
246	1975	3.75	YELLOW	8		
260	1975	3.2	GREEN	10	3	8
274	1975	3.25	PALE YELLOW	8	8	16
288	1975	2.6	PALE YELLOW	10		
302	1975	1.75	PALE YELLOW	9		
316	1975	2.3	YELLOW	10	8	16
127	1976	1.9	YELLOW GREEN	3		
140	1976	2.5	GREEN YELLOW	10	3	8
154	1976	3.25	YELLOW GREEN	0		
168	1976	2.9	PALE GREEN	5	0	3
182	1976	2.4	YELLOW GREEN	0		
196	1976	3.25	GREEN	0	3	8
210	1976	3.5	GREEN	10		
224	1976	2.9		5	8	16
238	1976	3.25	PALE GREEN	4		
252	1976	3.25	PALE GREEN	9	8	16
266	1976	4	GREEN	10	8	16
280	1976	2.8	YELLOW GREEN	10	3	8
294	1976	2.5	YELLOW GREEN	10	3	8
151	1978	3.3	GREEN YELLOW	10	8	16
179	1978	3.5	PALE GREEN	0	4	8
207	1978	4.1	YELLOW GREEN	0	8	16
235	1978	3.4	GREEN	10	4	8
263	1978	3.5	YELLOW GREEN	9	1	4
291	1978	2.4	PALE YELLOW	7	0	8
162	1980	3.4	GREEN	0	7	10
190	1980	3.2	GREEN	0		
218	1980	2.4	YELLOW GREEN	10	10	12
246	1980	3.6	GREEN YELLOW	0	0	2
274	1980	3.5	PALE YELLOW	10	5	10
302	1980	2.85	YELLOW	0	0	5
132	1981	3	YELLOW GREEN	0	5	10
146	1981	3.7	YELLOW GREEN	1	5	10
160	1981	3.6	YELLOW GREEN	3	0	5
174	1981	3.4	GREEN	7		
202	1981	3.7	YELLOW	2	0	5
216	1981	3.6	GREEN YELLOW	0	0	5
230	1981	3.4	YELLOW GREEN	4	5	10
244	1981	4.8	YELLOW	7	5	10
258	1981	4	GREEN	8	5	10
272	1981	3.4	YELLOW GREEN	8	0	5
286	1981	2.8	YELLOW	10	10	15
300	1981	2.6	YELLOW	10	5	10

LAKE 302 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
138	1982	2.75	YELLOW GREEN	10	0	5
152	1982	3.8	YELLOW GREEN	10	15	20
166	1982	4	BROWN GREEN	8	15	20
194	1982	2.8	YELLOW GREEN	3	0	5
208	1982	3.2	GREEN	2	0	0
222	1982	1.4	GREEN	1	0	5
236	1982	4.2	GREEN	10	0	5
250	1982	4.4	PALE YELLOW	4	5	10
264	1982	3.3	GREEN	0	0	5
278	1982	2.2	YELLOW	9	10	15
292	1982	2	YELLOW	10	0	5
298	1982	2.7	YELLOW	2	0	0
129	1983	2.2	YELLOW	7	15	20
137	1983	2.2	YELLOW	10	10	25
151	1983	3.8	YELLOW	1	5	10
165	1983	3.5	GREEN YELLOW	10	0	3
179	1983	3.2	GREEN	1	0	5
193	1983	2.8	YELLOW BROWN	4	0	5
207	1983	4.4	GREEN	7	15	20
214	1983	3.8	YELLOW GREEN	9	15	20
221	1983	2.8	YELLOW GREEN	9	0	0
236	1983	4.4	GREEN	9	0	5
249	1983	3.4	GREEN	7	10	15
263	1983	2.9	YELLOW	10	20	25
277	1983	3.2	GREEN	10	0	0
291	1983	2.4	YELLOW BROWN	2	0	0
122	1984	3	GREEN	10	0	5
136	1984	3	GREEN	3	5	10
150	1984	4.3	PALE GREEN	0		
164	1984	3.3	PALE GREEN	10	5	10
178	1984	2.6	YELLOW BROWN	10		
192	1984	3.1	TURBID GREEN	8	0	0
206	1984	4	PALE GREEN	5	0	5
220	1984	3.8	PALE GREEN	1		
222	1984	3.8	PALE GREEN	0	10	15
234	1984	4.2	YELLOW	2	10	15
262	1984	3.8	PALE BROWN	0	0	5
127	1985	2.8	YELLOW BROWN	1	5	10
141	1985	3	YELLOW BROWN	1	5	10
155	1985	2.1	YELLOW	10	15	20
169	1985	DATA IS NOT AVAILABLE				
183	1985	3	YELLOW	1	0	5
197	1985	3.4	YELLOW GREEN	4	5	10
211	1985	3	GREEN YELLOW	9	0	5
225	1985	2.5	YELLOW	10	25	30
239	1985	3.5	GREEN YELLOW	4	5	10
253	1985	3.4	YELLOW	3	0	5
267	1985	3.6	PALE GREEN	10	15	20
281	1985	2.4	YELLOW	10	30	35
295	1985	2.5	GREEN	10	10	15

LAKE 302 N

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
126	1986	2.6	BROWN	10	10	15
140	1986	3.8	DARK BROWN	1	5	10
154	1986	3.8	YELLOW	8	10	15
168	1986	5.4	TURBID	1	0	0
182	1986	4	GREEN	10	0	5
196	1986	3.8	GREEN	5	0	5
210	1986	3.6	YELLOW	10	0	5
224	1986	4.6	GREEN	0	0	5
238	1986	2.8	YELLOW GREEN	10	15	20
252	1986	3.2	TURBID GREEN	6	0	0
266	1986	3.1	BROWN	10	0	5
280	1986	3.1	GREEN	10	0	0
301	1986	3.4	YELLOW	10	5	10

LAKE 302 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
153	1972	4.1	YELLOW GREEN	2	1	3
167	1972	3.3	YELLOW GREEN	10	16	32
181	1972	3.6	GREEN	2	0	1
195	1972	4.2	GREEN	1	3	8
209	1972	4.8	YELLOW GREEN	0		
223	1972	3.7	GREEN	9	16	32
237	1972	4.1	YELLOW GREEN	5	3	8
258	1972	3.2	YELLOW GREEN	1	16	32
265	1972	3	YELLOW ORANGE	10	32	64
286	1972	3.2	YELLOW GREEN	4	1	3
293	1972	2.9	YELLOW GREEN	9	8	16
127	1973	4.6	BROWN GREEN	1		
141	1973	3.75	GREEN	3	3	8
155	1973	3	GREEN	4	32	48
169	1973	5	YELLOW GREEN	10	3	8
183	1973	3.8	GREEN YELLOW	0	8	16
197	1973	3.6	GREEN	7	8	16
211	1973	3.1	GREEN	10	8	16
225	1973	3.6	GREEN	5	8	16
239	1973	5.1	YELLOW GREEN	0	3	8
253	1973	4.2	YELLOW GREEN	0	0	3
267	1973	3.25		10	16	32
281	1973	3	YELLOW GREEN	10	3	8
295	1973	3	YELLOW	3	0	3
309	1973	3	PALE YELLOW	8	16	24

LAKE 302 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
156	1974	3.6	GREEN	2	8	16
184	1974	2.8	YELLOW GREEN	10		
212	1974	3.8	GREEN	10	3	8
238	1974	3	YELLOW GREEN	10		
268	1974	3.2	YELLOW GREEN	7	3	8
296	1974	2.75	YELLOW	3	3	8
308	1974	3	PALE YELLOW	10	0	8
134	1975	3.6		10	16	32
148	1975	3.6	YELLOW GREEN	1	0	8
162	1975	3.9	GREEN	5	0	3
176	1975	4	YELLOW GREEN	0	8	16
190	1975	3.5	YELLOW GREEN	3	3	8
204	1975	4.9	GREEN	8	3	8
218	1975	4.3	GREEN YELLOW	0	8	16
232	1975	3.6	YELLOW GREEN	3	0	8
246	1975	4		10		
260	1975	3.5	YELLOW	10	3	8
274	1975	3.25	PALE YELLOW	7	8	16
288	1975	3.25	PALE YELLOW	10	0	8
302	1975	2.75	PALE YELLOW	9	0	8
316	1975	2.8	YELLOW GREEN	10	8	16
127	1976	3.7	YELLOW GREEN	3		
140	1976	3.6	GREEN	10	3	8
154	1976	4.8	GREEN	0		
168	1976	4.25	PALE GREEN	4	0	3
182	1976	2.6	YELLOW GREEN	0		
196	1976	5	GREEN	0	8	16
210	1976	5	GREEN	7		
224	1976	4		8	8	16
238	1976	4.5	GREEN	2	8	16
252	1976	3.75	YELLOW GREEN	9	8	16
266	1976	3.5	GREEN	10	16	24
280	1976	3.2	PALE GREEN	9.5	3	8
294	1976	4	BLUE GREEN	10	3	8
151	1978	5	YELLOW GREEN	10	8	16
179	1978	4.6	PALE GREEN	0	0	3
207	1978	5.1	PALE GREEN	0	8	16
235	1978	4.2	GREEN	10	4	8
263	1978	3	YELLOW GREEN	9	3	6
291	1978	3.4	PALE YELLOW	7		
162	1980	3.8	GREEN			
190	1980	3.2	GREEN	3	2	5
218	1980	2.8	DARK GREEN	10	10	12
246	1980	3.2	GREEN YELLOW	3	2	5
274	1980	2.8	PALE	10	8	10
302	1980	2.42	YELLOW	0	0	2

LAKE 302 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
132	1981	3.7	YELLOW	0	5	10
146	1981	3.8	YELLOW	1	5	7
160	1981	3.6	YELLOW	4	5	10
174	1981	3.5	GREEN	9	0	5
188	1981	3.95	YELLOW	1	5	10
202	1981	4.4	YELLOW	4	0	5
216	1981	3.8	YELLOW GREEN	1	0	5
230	1981	3.3	YELLOW GREEN	3	5	10
244	1981	4.4	YELLOW	7	5	10
258	1981	3	GREEN	9	5	10
272	1981	3	YELLOW GREEN	9	10	15
286	1981	2.8	YELLOW	10	10	15
300	1981	2.6	YELLOW	10	0	5
138	1982	4	YELLOW GREEN	10	10	15
152	1982	4	GREEN	10	15	20
166	1982	3.75	GREEN YELLOW	8	15	20
180	1982	3.6	YELLOW	0	0	5
194	1982	3.8	YELLOW	5	5	10
208	1982	5.2	GREEN YELLOW	2	0	5
222	1982	4	GREEN	0	0	5
236	1982	5	PALE GREEN	9	0	5
250	1982	4.8	GREEN BLUE	8	15	20
264	1982	4	GREEN	0	0	5
278	1982	3	YELLOW	10	5	10
298	1982	3.4	YELLOW	2	0	5
129	1983	4.4	PALE GREEN	6	15	20
137	1983	5.2	YELLOW GREEN	1	10	15
151	1983	4.8	BLUE GREEN	0	15	20
165	1983	6	PALE GREEN	10	0	3
179	1983	5.6	GREEN	1	0	5
193	1983	4.6	BLUE GREEN	1	0	5
207	1983	5.4	GREEN	7	15	20
214	1983	5.4	GREEN	9	10	15
221	1983	5.2	GREEN	10	0	5
236	1983	5.2	GREEN	5	5	10
249	1983	3.8	GREEN	4	5	10
263	1983	3	PALE YELLOW	10	20	25
277	1983	3.2	GREEN	10	0	5

LAKE 302 S

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
122	1984	5.6	GREEN YELLOW	10	0 5
136	1984	5.4	GREEN YELLOW	3	5 10
150	1984	4.9	PALE GREEN	1	
164	1984	5.3	PALE GREEN	10	0 5
178	1984	3.8	PALE GREEN	9	
192	1984	4	PALE GREEN	6	
206	1984	4	GREEN	0	0 5
220	1984	4	PALE GREEN	1	0 5
223	1984	3.4	PALE GREEN	1	10 15
234	1984	3	TURBID GREEN	2	5 10
262	1984	2.4	YELLOW BROWN	0	0 5
290	1984	1		9	10 15
127	1985	3.6	YELLOW	1	0 5
141	1985	3.8	YELLOW	1	10 15
155	1985	4	YELLOW GREEN	10	10 15
169	1985	DATA IS NOT AVAILABLE			
183	1985	3	YELLOW GREEN	2	0 0
197	1985	3.5	GREEN	1	0 5
211	1985	1.9	GREEN	9	0 5
225	1985	3.8	PALE	10	30 35
239	1985	3.4	TURBID	3	5 10
253	1985	3	PALE	4	0 5
267	1985	2.8	PALE GREEN	10	20 25
281	1985	2.4	GREEN YELLOW	10	30 35
295	1985	3	GREEN	10	15 20
126	1986	3.9	YELLOW	10	10 15
140	1986	4.4	PALE		5 10
154	1986	4.9	GREEN	8	15 20
168	1986	5.8	GREEN	1	0 0
182	1986	5.2	PALE GREEN	10	0 5
196	1986	5.2	YELLOW	3	0 5
210	1986	4.8	PALE GREEN	10	0 0
224	1986	DATA IS NOT AVAILABLE			
238	1986	2.6	TURBID GREEN	10	15 20
252	1986	2.5	TURBID GREEN	6	0 0
266	1986	1.9	GREEN	1	0 0
280	1986	3.6	TURBID	10	0 0
301	1986	3.8	GREEN	10	0 5

LAKE 303

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
140	1969	2.5	YELLOW	3		
170	1969	2				
184	1969	1.8	GREEN YELLOW			
196	1969	2.2	YELLOW			
202	1969	2	YELLOW			
210	1969	2	YELLOW			
227	1969	1.8	YELLOW GREEN			
238	1969	2	YELLOW			
251	1969	2.1	YELLOW GREEN	8	3	5
266	1969	2.2	YELLOW BROWN	10	9	12
282	1969	2.3	YELLOW BROWN	10		
294	1969	2.5	BROWN ORANGE	7	9	18
132	1970	2.5		10		
133	1970	2.6		1		
140	1970	2.5		10	8	16
159	1970	2.5	YELLOW	2	8	16
180	1970	2.4	YELLOW	8		
208	1970	2.5	YELLOW			
259	1970	1.95	YELLOW BROWN	2	3	8
273	1970	1.6	YELLOW GREEN			
301	1970	2.7	YELLOW	10	0	1
120	1971	2.5		10		
122	1971	2.5	YELLOW ORANGE	0		
132	1971	2.6	YELLOW GREEN	6	1	3
146	1971	2.5	YELLOW GREEN	2	3	6
160	1971	2.75	YELLOW GREEN	6	3	6
174	1971	2.4	YELLOW GREEN	7	1	3
188	1971	2	YELLOW ORANGE	10	8	16
202	1971	2.5	YELLOW	6	1	3
216	1971	1.8	YELLOW GREEN	0		
230	1971	2.5	YELLOW GREEN	1	0	1
244	1971	2.2	YELLOW GREEN	10	1	3
258	1971	1.8	YELLOW GREEN	9	1	3
286	1971	2.6	YELLOW	10	3	6
300	1971	3	YELLOW BROWN	10	3	6

LAKE 303

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
183	1975	1.5		0	0	3
197	1975	1.2	YELLOW GREEN	3	3	8
211	1975	1	YELLOW GREEN	0	0	8
225	1975	.8	YELLOW	5	8	16
239	1975	.8	GREEN	9	0	8
253	1975	1.1	YELLOW GREEN	10	0	3
267	1975	1	GREEN	0		
281	1975	1	YELLOW GREEN	1	0	8
295	1975	1.1	YELLOW GREEN	10		
133	1976	2.5	YELLOW GREEN	0	0	8
147	1976	2.2	YELLOW GREEN	10		
161	1976	1.9	YELLOW GREEN	10		
175	1976	1.8	YELLOW GREEN	0	0	8
189	1976	1.9	GREEN	0	0	3
203	1976	1.4	YELLOW GREEN	1		
217	1976	1	YELLOW GREEN	10		
231	1976	.75	GREEN	4	3	8
245	1976	.7	YELLOW GREEN	1	0	3
259	1976	.9	YELLOW GREEN	7	0	3
273	1976	.9	YELLOW GREEN	1	3	8
287	1976	1.1	YELLOW GREEN	9	8	16
130	1977	3	PALE BROWN	10	0	8
144	1977	2.9	BROWN GREEN	3	0	4
158	1977	1.9	YELLOW BROWN	1	0	3
172	1977	1.25	BROWN	0	0	8
186	1977	1.75	PALE BROWN	10	4	8
200	1977	2.8	YELLOW GREEN	5	3	4
214	1977	3	YELLOW GREEN	7		
228	1977	2.6	YELLOW GREEN	0	1	3
270	1977	2.6	YELLOW	10	0	8
284	1977	2.6	GREEN	10	24	32
298	1977	2	GREEN	10	8	16
136	1978	2.6	YELLOW GREEN	0	0	8
150	1978	2.5	GREEN BROWN	0		
164	1978	2.6	YELLOW	2		
178	1978	2.5	YELLOW GREEN	0	0	3
192	1978	2.3	YELLOW GREEN	6		
206	1978	2.4	DARK GREEN	.5	12	16
221	1978	1.9	YELLOW GREEN	4	8	16
234	1978	1.85	YELLOW GREEN	10		
248	1978	1.85	YELLOW GREEN	0	3	6
276	1978	1.6	YELLOW GREEN	10	3	8

LAKE 304

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
128	1969	2.5				
140	1969	2.7	YELLOW	3		
170	1969	2.1				
184	1969	2.2	ORANGE			
196	1969	2.33	YELLOW			
210	1969	2.6	ORANGE			
227	1969	2	YELLOW			
238	1969	2.75	YELLOW			
251	1969	2.5	ORANGE BROWN	10	0	1
266	1969	4.2	YELLOW GREEN	10	3	5
282	1969	2.2	ORANGE BROWN	10		
294	1969	2.4	BROWN ORANGE	10	7	9
132	1970	3.8	ORANGE BROWN	10	0	3
133	1970	2.2	ORANGE BROWN	5		
134	1970	3.5	ORANGE BROWN	10	0	3
136	1970	2.6	ORANGE BROWN	9	0	3
140	1970	2.6		10	8	16
159	1970	2.8	YELLOW BROWN		8	16
180	1970	2.4				
208	1970	3	ORANGE			
259	1970	2.8	YELLOW BROWN	2	3	8
273	1970	2.8	YELLOW ORANGE			
287	1970	2.5	ORANGE BROWN	10		
301	1970	2.4	ORANGE	10		
120	1971	3.2		10		
122	1971	3	ORANGE BROWN	0		
132	1971	2.9	ORANGE BROWN	10	1	3
146	1971	2.3	ORANGE BROWN	3	1	2
153	1971	3.6	YELLOW GREEN	0		
160	1971	2.6	YELLOW GREEN	9		
167	1971	2.2	YELLOW GREEN	10		
174	1971	1.3	YELLOW GREEN	10		
181	1971	1.1	YELLOW GREEN	10		
188	1971	1.5	ORANGE	9	3	6
195	1971	1.1	YELLOW GREEN	4	1	2
202	1971	1.1	YELLOW GREEN	9	1	3
209	1971	1	YELLOW GREEN	7	3	6
216	1971	1.1	YELLOW GREEN	0		
223	1971	.9	GREEN	5	1	3
230	1971	1.25	YELLOW GREEN	1	0	1
237	1971	.7	GREEN	10	3	6
244	1971	1	YELLOW GREEN	10	1	3

LAKE 304

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
251	1971	1	YELLOW GREEN	0	1	3
258	1971	1.1	YELLOW GREEN	9	1	3
265	1971	1	YELLOW GREEN	9		
272	1971	1	YELLOW GREEN	1		
279	1971	1.3	YELLOW GREEN	3	1	3
286	1971	1.4	YELLOW	10		
293	1971	1.4	YELLOW BROWN	1	1	3
300	1971	1.4	YELLOW BROWN	10		
313	1971	1.8	YELLOW GREEN	0	3	8
124	1972	2	ORANGE BROWN	10	3	8
138	1972	2.6	YELLOW GREEN	8	3	8
152	1972	2.2	YELLOW GREEN	2	8	16
159	1972	2.2	YELLOW GREEN	1	1	3
166	1972	2	YELLOW	4	16	32
180	1972	2.9	YELLOW BROWN	8		
187	1972	3.3	YELLOW GREEN	1	0	1
194	1972	2.3	YELLOW GREEN	6	2	5
208	1972	3	YELLOW ORANGE	7	1	3
222	1972	3	YELLOW GREEN	3	1	3
228	1972	2.1		10		
236	1972	1.7	YELLOW GREEN	0		
250	1972	1.3	ORANGE BROWN	10	3	8
264	1972	1.2	YELLOW GREEN	10	3	8
271	1972	1.3	YELLOW GREEN	10		
278	1972	1.6	ORANGE	10	0	1
292	1972	1.8	YELLOW BROWN	1	8	16
120	1973	1.8	YELLOW BROWN	0	3	8
136	1973	2.2	ORANGE	0	8	16
150	1973	2.2	YELLOW GREEN	2	3	8
164	1973	2.4	YELLOW BROWN	0	3	8
178	1973	1.9	YELLOW BROWN	10	8	16
192	1973	2.6	BROWN	0		
220	1973	2.5	YELLOW BROWN	5	0	3
234	1973	2.9	YELLOW BROWN	1	0	3
248	1973	2.6	YELLOW BROWN	4	16	24
262	1973	2.4	YELLOW	2	1	8
276	1973	2.4	YELLOW	0	8	16
290	1973	2.75	YELLOW BROWN	10		
304	1973	2.75	YELLOW BROWN	10	3	8

LAKE 304

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
163	1974	2	YELLOW BROWN	5	8	16
191	1974	2.4	BROWN YELLOW	1	3	8
219	1974	3	YELLOW BROWN	0	0	8
247	1974	3	YELLOW BROWN	0	3	8
275	1974	2.75	YELLOW	0	3	8
303	1974	3.5	YELLOW	10		
141	1975	3	YELLOW	10	0	3
155	1975	2.4	GREEN YELLOW	1	8	16
169	1975	2.3	YELLOW GREEN	0		
183	1975	3	YELLOW ORANGE	0		
197	1975	2.1	ORANGE	6	3	8
211	1975	1.7	GREEN BROWN	0	0	3
225	1975	1.8	YELLOW GREEN	4	8	16
239	1975	1.8	ORANGE GREEN	6		
253	1975	4.5	YELLOW	10	0	3
267	1975	4	PALE YELLOW	2		
281	1975	3	PALE YELLOW	3	8	11
295	1975	4.25	YELLOW BROWN	10		
133	1976	2.6	GREEN YELLOW	0	0	8
147	1976	2.9	YELLOW GREEN	8	3	8
161	1976	3.2	YELLOW ORANGE	9	8	16
175	1976	3.6	YELLOW BROWN	9		
189	1976	2.1	ORANGE	1	0	3
203	1976	2.5	BROWN GREEN	0	3	11
217	1976	2.75	YELLOW BROWN	10		
231	1976	2.6	BROWN GREEN	10	0	3
245	1976	1.5	BROWN GREEN	3	0	3
259	1976	1.2	BROWN GREEN	10	0	3
273	1976	1.5	PALE ORANGE	0	3	8
287	1976	1.4	YELLOW	9	8	16
130	1977	3.4	BROWN	10	0	8
144	1977	2.1	YELLOW BROWN	3	0	3
158	1977	2.4	BROWN	2	0	1
172	1977	3	YELLOW BROWN	0	0	4
186	1977	2.8	ORANGE BROWN	10	6	8
200	1977	2.5	ORANGE BROWN	3	3	4
214	1977	3.16	ORANGE BROWN	4		
228	1977	3.45	PALE ORANGE	0		
242	1977	2.2	BROWN YELLOW	9	3	8
270	1977	2.3	YELLOW ORANGE	10	0	8
284	1977	1.6	ORANGE BROWN	10	24	32
298	1977	2.2	ORANGE BROWN	10	0	8

LAKE 304

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
128	1986	3.2	ORANGE	10	10 15
142	1986	2.6	BROWN	0	5 10
156	1986	2.4	BROWN	8	0 5
170	1986	2.8	ORANGE	1	10 15
184	1986	2.4	ORANGE BROWN	9	0 5
198	1986	2.8	BROWN	9	0 5
212	1986	2.6	BROWN ORANGE	10	10 15
226	1986	3.2	YELLOW	10	0 0
240	1986	3	GREEN YELLOW	6	5 10
254	1986	2.1	BROWN	1	0 0
268	1986	1.6	BROWN	10	15 20
281	1986	1.8	ORANGE	9	5 10
156	1985	2.7	BROWN	0	0 5
170	1985	1.5	YELLOW BROWN	1	15 20
185	1985	1.8	BROWN	4	5 10
198	1985	2.5	YELLOW BROWN	1	0 0
212	1985	2.8	YELLOW BROWN	5	0 5
226	1985	2.1	DARK YELLOW	10	20 25
240	1985	2	YELLOW BROWN	1	0 0
254	1985	2.2	BROWN	0	0 0
268	1985	1.4	BROWN	2	15 20
297	1985	1.3	BROWN	10	15 20

LAKE 305

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
166	1968	5.7	GREEN	3	18 27
187	1968	6.9		9	
312	1968	5.5	GREEN	9	
127	1969	7.5			
137	1969	8.5	BLUE GREEN	0	
176	1969	6.5	GREEN		
188	1969	8			
203	1969	8	GREEN		
239	1969	9.5			
274	1969	7.5	YELLOW GREEN	10	1 3
302	1969	8	BLUE GREEN		
316	1969	8	BLUE GREEN	10	14 18
131	1971	8	GREEN BLUE	9	5 10
159	1971	6.3	GREEN	0	
187	1971	6.8	YELLOW GREEN	2	8 16
215	1971	6.2	GREEN	3	1 2
243	1971	8.6	GREEN	2	8 16
271	1971	8.6	YELLOW GREEN	10	1 3
299	1971	7.8	GREEN	9	1 3

LAKE 305

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR		CLOUD COVER N/10	WIND SPEED KMPH	
141	1974	5.5	GREEN		8	16	32
169	1974	4.8	GREEN		3	3	8
197	1974	7.5	GREEN		7	8	16
225	1974	7.8	GREEN		3	3	8
253	1974	7	GREEN		10		
281	1974	8.5	BLUE	GREEN	10	8	16
309	1974	6.1	YELLOW	GREEN	10	3	8
141	1985	4.1	PALE		0	5	10
158	1985	5.7	GREEN		1	15	20
169	1985	5.8	GREEN		8	10	15
184	1985	5.3	PALE	GREEN	4	10	15
197	1985	5.4	PALE	GREEN	2	15	20
213	1985	5.6	PALE	GREEN	4	0	0
225	1985	DATA IS NOT AVAILABLE					
240	1985	6	PALE	GREEN	1	0	0
253	1985	6.2	PALE	YELLOW	1	10	15
269	1985	6.4	PALE	GREEN	2	5	10
281	1985	4.6			10	20	25
302	1985	4	PALE	GREEN	10	10	15
134	1986	6.6	YELLOW		0	0	0
146	1986	7.2	GREEN		0	0	0
162	1986	3.4	GREEN		9	10	15
175	1986	7.8	GREEN		1	5	10
190	1986	8	GREEN		0	0	5
203	1986	9	PALE		0	0	5
217	1986	7.5	PALE	GREEN	1	5	10
231	1986	7.5	PALE		1	0	5
246	1986	6.5	GREEN		10	10	15
259	1986	6.5	PALE	GREEN	4	15	20
273	1986	7.1	PALE	GREEN	1	20	25
281	1986	6.6	PALE	GREEN	9	0	5
302	1986	6.8	PALE	GREEN	10	15	20

LAKE 373

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
151	1983	6.5	PALE GREEN	1	5 10
167	1983	7.2	PALE GREEN	9	15 30
179	1983	7.4	PALE GREEN	1	0 5
193	1983	9	GREEN	1	15 20
207	1983	8	BLUE GREEN	9	15 25
222	1983	8.4	BLUE GREEN	10	0 5
235	1983	5.8	BLUE GREEN	7	0 0
250	1983	8.2	TURQ	10	0 0
263	1983	6.6	GREEN	10	5 10
298	1983	5.8	PALE GREEN	9	15 20
136	1984	5.4	PALE GREEN	0	5 10
152	1984	7.6	PALE GREEN	8	0 5
164	1984	6	PALE GREEN	10	10 15
179	1984	8.1	PALE GREEN	7	20 25
192	1984	10	PALE GREEN	8	0 5
207	1984	7.8	PALE	10	0 5
222	1984	9.4	PALE	4	10 15
235	1984	5.8	GREEN	10	10 15
248	1984	7.2	PALE GREEN	3	0 5
263	1984	8.2	PALE GREEN	1	0 5
276	1984	7.4	PALE GREEN	2	0 5
296	1984	6.2	BLUE GREEN	10	10 15
148	1985	6.4	PALE	1	0 5
164	1985	71	PALE GREEN	8	0 5
176	1985	6	PALE GREEN	10	20 25
191	1985	6.8	DARK	3	15 20
206	1985	6.8	GREEN	2	5 10
219	1985	5.5	BLUE YELLOW	6	15 20
232	1985	7.4	PALE	9	0 5
248	1985	6.4	PALE GREEN	7	5 10
260	1985	6.8	TURBID GREEN	10	5 10
276	1985	5.2	PALE GREEN	9	10 15
288	1985	5.2	GREEN	7	5 10
302	1985	4.2	GREEN	1	15 20
133	1986	4.6	GREEN	8	5 10
148	1986	7.8	PALE GREEN	0	0 5
160	1986	8.2	GREEN		5 10
176	1986	7.4	PALE	3	10 15
189	1986	7.8	GREEN	4	0 5
204	1986	7.8	GREEN	10	10 15
217	1986	8.4	GREEN	3	0 5
231	1986	7.2	PALE GREEN	3	5 10
245	1986	6.2	GREEN	10	10 15
259	1986	7	PALE GREEN	5	0 5
273	1986	7.1	PALE GREEN	4	5 10

LAKE 374

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
214	1983	6.4	GREEN	9	20 25
229	1983	8.4	GREEN	0	10 15
257	1983	8	GREEN	1	0 0
270	1983	5	PALE GREEN	8	0 5
298	1983	6.4	PALE GREEN	9	10 15
142	1984	5.2	PALE GREEN	10	15 20
171	1984	6.3	PALE GREEN	8	
198	1984	5.2	GREEN	8	15 20
214	1984	8.6	PALE GREEN	0	10 15
227	1984	5.9	PALE	7	25 30
242	1984	9.2	PALE GREEN	2	20 25
254	1984	6.4	PALE GREEN	10	0 0
296	1984	7.8	BLUE GREEN	10	10 15
140	1985	4.7	PALE GREEN	9	10 15
156	1985	4.5	PALE	2	10 15
168	1985	5.1	GREEN	8	10 15
185	1985	6.1	PALE GREEN	2	5 10
196	1985	6	PALE GREEN	9	15 20
212	1985	7.8	YELLOW GREEN	0	0 5
224	1985	6	GREEN	10	0 10
241	1985	6.3	PALE YELLOW	2	10 15
252	1985	5.5	PALE GREEN	8	10 15
269	1985	5.5	PALE GREEN	5	0 5
280	1985	7.4	GREEN YELLOW	6	5 10
301	1985	4.8	PALE GREEN	2	15 20
132	1986	7.7	PALE GREEN	9	10 15
148	1986	6.4	PALE GREEN	1	0 0
161	1986	6.4	GREEN	10	0 5
176	1986	6.4	PALE GREEN	7	10 15
188	1986	6.5	GREEN	2	20 25
204	1986	6.6	GREEN	10	10 15
216	1986	7.6	GREEN	8	5 10
232	1986	7.5	PALE GREEN	1	25 30
244	1986	6.4	GREEN	2	20 25
259	1986	6	PALE GREEN	7	10 15
272	1986	8	PALE GREEN	10	0 0
296	1986	6.2	GREEN	10	0 5

LAKE 375

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
151	1983	4.4	YELLOW GREEN	5	0 2
167	1983	6	GREEN	8	20 25
179	1983	7.4	YELLOW GREEN	1	0 5
193	1983	7.4	GREEN	2	15 20
207	1983	5.9	GREEN	3	10 20
222	1983	6.4	GREEN	9	0 5
235	1983	6.2	PALE GREEN	9	0 0
250	1983	6.6	GREEN YELLOW	10	0 0
263	1983	6	YELLOW	10	0 5
297	1983	6	PALE GREEN	10	10 15
148	1986	5.2	PALE YELLOW	0	0 5
161	1986	6.2	GREEN	10	5 10
176	1986	6.8	YELLOW	3	10 15
189	1986	6	PALE	4	0 5
217	1986	7.2	YELLOW	2	5 10
231	1986	6.6	PALE GREEN	7	0 5
245	1986	6.5	GREEN	10	10 15
259	1986	7.4	PALE GREEN	5	0 5
273	1986	6.3	PALE GREEN	6	5 10
295	1986	5.8	YELLOW	1	0 5

LAKE 382

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH
131	1977	4.9	GREEN BROWN	10	0 8
159	1977	4.25	PALE BROWN	10	8 12
187	1977	4.7	YELLOW GREEN	10	0 3
215	1977	4.7	YELLOW GREEN	2	3 4
243	1977	4	YELLOW GREEN	10	1 3
271	1977	3.4	GREEN	0	
137	1978	4.7	YELLOW GREEN	0	8 16
165	1978	4.2	YELLOW GREEN	9	11 16
193	1978	2.5	BROWN ORANGE	10	19 24
221	1978	4.2	PALE GREEN		0 3
249	1978	4.2	PALE GREEN	10	3 8
277	1978	3.4	PALE YELLOW	10	0 8

LAKE 382

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
156	1979	3.8	YELLOW GREEN	3	8	11
184	1979	4	GREEN	9	3	8
212	1979	4.7	YELLOW GREEN	0		
240	1979	4	YELLOW GREEN	10	8	16
268	1979	3.6	PALE GREEN	1	0	3
296	1979	4	DARK GREEN	10	5	7
141	1980	4.8	YELLOW GREEN	0	5	7
169	1980	3.4	YELLOW GREEN	10	2	5
197	1980	3.4	GREEN	10	5	7
225	1980	3	GREEN	10	5	7
253	1980	2.75	YELLOW GREEN	1	8	10
281	1980	3.7	PALE YELLOW	1	10	20
131	1983	3	YELLOW BROWN	7	0	5
151	1983	4.2	YELLOW BROWN	0	0	5
179	1983	4	YELLOW GREEN	1	0	5
207	1983	4.4	YELLOW	8	15	20
263	1983	3.4	YELLOW GREEN	10	10	15
291	1983	3.6	YELLOW	3	0	5
136	1984	5	YELLOW	0	5	10
150	1984	5.4	GREEN YELLOW	3	5	10
164	1984	3.7	YELLOW BROWN	10	0	0
178	1984	3.8	YELLOW	10	0	0
192	1984	5	YELLOW BROWN	7	0	0
220	1984	3.6	YELLOW BROWN	6	5	10
222	1984	3.6	YELLOW BROWN	7	10	15
234	1984	5.5	PALE YELLOW	2	10	15
249	1984	3.6	PALE GREEN	5	5	10
276	1984	3.4	PALE GREEN	0	5	10
141	1985	3.5	PALE YELLOW	0	5	10
158	1985	4	YELLOW BROWN	1	0	5
169	1985	3.5	YELLOW	5	10	15
184	1985	2.9	YELLOW BROWN	6	5	10
197	1985	3.1	YELLOW	3	10	15
213	1985	4.2	YELLOW	4	0	0
225	1985	3.2	YELLOW BROWN	10	20	30
240	1985	3.3	YELLOW	1	0	0
253	1985	4.4	YELLOW	10	15	20
269	1985	3.3	YELLOW BROWN	3	10	15
281	1985	3	PALE BROWN	10	30	35
294	1985	4.5	BROWN	1	5	10

LAKE 382

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
134	1986	4.2	YELLOW	0		
146	1986	5.4	YELLOW	1	0	C
162	1986	DATA IS NOT AVAILABLE				
175	1986	4.4	YELLOW	3	10	15
190	1986	4.1	YELLOW	0		
203	1986	4.6	YELLOW	0	0	5
219	1986	4.2	YELLOW	10	10	15
231	1986	4.7	YELLOW BROWN	3	15	20
259	1986	3.5	YELLOW	4	15	20
273	1986	DATA IS NOT AVAILABLE				
28[illegible]	1986	3.8	TURBID YELLOW	9	0	5
301	1986	5.1	TURBID YELLOW	10	15	20

LAKE 383

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
192	1974	3	ORANGE	0	3	8
213	1974	3.2	ORANGE	10		
248	1974	2.5	ORANGE YELLOW	1	8	16
269	1974	3.25	ORANGE	2	3	8
297	1974	2	YELLOW BROWN	0	3	8
140	1975	2.8	YELLOW BROWN	7		
168	1975	3.6	YELLOW ORANGE	1	0	8
196	1975	3.4	YELLOW ORANGE	0	16	32
224	1975	4	YELLOW	1		
252	1975	3.8	ORANGE	8	8	16
280	1975	4	ORANGE BROWN	3	0	8
308	1975	2.75	BROWN	0	0	8

LAKE 623

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
157	1983	4	YELLOW GREEN	0	20	40
174	1983	6	YELLOW	1	0	0
185	1983	4.8	YELLOW	10	10	15
201	1983	4.6	GREEN	8	5	10
213	1983	6.3	GREEN	0	5	10
229	1983	6	YELLOW	1	5	10
241	1983	6	GREEN	9	0	5
257	1983	4.4	YELLOW	1	0	5
269	1983	5	YELLOW	0	0	0
297	1983	3.6	YELLOW	10	15	20
152	1984	4.8	GREEN	9	0	5
164	1984	5.6	GREEN	10	10	15
179	1984	5.2	PALE YELLOW	6	15	20
192	1984	6.8	GREEN YELLOW	8	0	0
207	1984	4.9	PALE YELLOW	8	10	15
220	1984	7.2	PALE GREEN	1	0	0
248	1984	5.2	PALE GREEN	3	0	5
276	1984	4.1	PALE GREEN	2	10	15
297	1984	3.8	GREEN	10	10	15
148	1985	4.7	YELLOW	2	0	5
164	1985	4.6	GREEN	6	10	15
176	1985	4.6	GREEN YELLOW	10	20	25
191	1985	4.2	YELLOW	1	10	15
206	1985	3.8	YELLOW	4	0	5
219	1985	4.8	YELLOW	8	15	20
232	1985	5.2	YELLOW	9	0	5
248	1985	5	YELLOW	4	10	15
260	1985	3.8	GREEN	10	0	5
276	1985	3.6	GREEN	9	10	15
288	1985	4	GREEN	10	5	10
302	1985	3.4	YELLOW	9	5	10

LAKE 629

SAMPLING DATE		SECCHI DEPTH (M)	WATER COLOUR	CLOUD COVER N/10	WIND SPEED KMPH	
158	1983	3.8	YELLOW BROWN	0	10	15
174	1983	6.2	YELLOW	2	0	5
186	1983	4	YELLOW BROWN	2	10	15
202	1983	4.3	ORANGE BROWN	2	20	25
214	1983	4	YELLOW	9	20	25
229	1983	4.8	YELLOW ORANGE	0	10	15
270	1983	3.8	YELLOW BROWN	0	0	5
298	1983	4	PALE GREEN	10	0	5
142	1984	3.4	PALE YELLOW	10	10	15
158	1984	4.8	YELLOW	10	10	15
170	1984	3.2	YELLOW BROWN	8	15	20
186	1984	5.8	YELLOW	9	15	20
198	1984	4.5	YELLOW BROWN	8	10	15
214	1984	6.8	YELLOW	1	10	15
226	1984	6.3	YELLOW	5	10	15
242	1984	6.2	PALE GREEN	9	10	15
254	1984	4.8	GREEN YELLOW	10	0	5
270	1984	3.4	YELLOW	8	20	25
296	1984	3.8	YELLOW BROWN	10	0	5
147	1985	3.2	PALE YELLOW	2	5	10
163	1985	4.1	YELLOW BROWN	4	10	15
175	1985	5.3	YELLOW BROWN	0	0	0
191	1985	4.9	PALE BROWN	3	15	20
203	1985	5.3	YELLOW	4	0	5
219	1985	3.7	YELLOW	3	15	20
231	1985	4.4	YELLOW	10	15	20
248	1985	4	YELLOW	4	15	20
259	1985	3.3	YELLOW	10	5	10
275	1985	4	PALE YELLOW	9	0	5
287	1985	2.8	DARK YELLOW	8	5	10
301	1985	3.2	ORANGE	1	15	20

C. Summary of two-tailed t-test results and time-trend ANOVA tests.
C = control basin years
A = acidified basin years
Ref = reference basin years
F = fertilized basin years
RC = recovery basin years

Test	Significance	
	T-test	Time-trend ANOVA
$\bar{x}$ L114 C vs x 114 A	$P \geq 0.05$	
L114 vs Ref		$P \geq 0.05$
$\bar{x}$ L223 C vs x L223 A	$P \geq 0.05$	
L223 vs Ref		$P < 0.05$
L223 vs Ref + 224		$P \geq 0.05$
$\bar{x}$ L226NE F vs x L226NE RC	$P \leq 0.05$	
$\bar{x}$ L226NE RC vs x L226SW RC	$P \geq 0.05$	
$\bar{x}$ L226SW F vs x L226SW RC	$P \geq 0.05$	
$\bar{x}$ L226NE F vs x L226SW F	$P \leq 0.05$	
L226NE vs Ref		$P < 0.01$
L226SW vs Ref		$P \leq 0.05$
L227 vs Ref		$P \leq 0.005$
$\bar{x}$ L261 C vs x L261 F	$P \geq 0.05$	
$\bar{x}$ L261 F vs x L261 RC	$P \geq 0.05$	
$\bar{x}$ L302N F vs x L302N A	$P \geq 0.05$	
$\bar{x}$ L302N F vs x L302S C	$P \geq 0.05$	
$\bar{x}$ L302N A vs x L302S A	$P \leq 0.05$	
$\bar{x}$ L302S C vs x L302N C	$P \geq 0.05$	
L302N vs Ref		$P < 0.05$
L302S vs Ref		$P \leq 0.05$
$\bar{x}$ L303 C vs x L303 F	$P \leq 0.05$	
$\bar{x}$ L303 F vs x L303 RC	$P < 0.05$	
$\bar{x}$ L303 C vs x L303 RC	$P \geq 0.05$	

Printed in Canada by
Supply and Services Canada
Printing Office
for exclusive distribution by
Fisheries and Oceans
Freshwater Institute
Winnipeg, Manitoba
Canada